



May 6, 2016

Ms. Darlene Forst
Shoreland Program
NH Department of Environmental Services
PO Box 95
Concord, NH 03302

RE: Northern Pass Transmission, LLC. Shoreland Applications

Dear Ms. Forst:

On behalf of Northern Pass Transmission LLC, Normandeau Associates, Inc. is submitting three shoreland applications for underground cable installation in the Northern Pass project area. The applications for Woodstock and Campton have been updated with additional shoreland impacts, and the application for Thornton is new. The proposed work is similar to what was submitted in October 2015, but upon further review of the reference line originally used to identify the shoreland buffer where it parallels the project route (and field access is not available), it was determined that using the visible edge of water apparent on current aerial photos slightly increased the shoreland buffer overlap with construction locations. There are now five construction sites along Route 3 in Thornton that appear to be within the Shoreland buffer. In Woodstock, two sites, numbered 5 and 7, were added, and Site 1 was added in Campton. These are numbered north to south, so the numbers of the sites submitted previously were changed accordingly in the applications. However, no changes to the work in the original sites will occur.

Per your guidance, there are no waiver requests associated with any of these applications. The Shoreland rules at RSA 483-B:9 IV-b. state "Public utility lines and associated structures and facilities, public roads, and public water access facilities including boat ramps shall be permitted by the commissioner as necessary and consistent with the purposes of this chapter and other state law." In addition, there are no calculations for unaltered area, as land within a roadway or shoulder cannot be left in an unaltered state for safety reasons.



We appreciate your review of these applications. Please feel free to contact me if you have any questions or require additional information.

Sincerely,

Lee Carbonneau

As Agent for Northern pass Transmission, LLC.

Senior Principal Scientist

Normandeau Associates, Inc.

Attach.

Cc. Robert Clarke, Northern Pass Transmission, LLC.



Via Certified Mail

April 28, 2016

Pemigewasset River Local Advisory Committee
Max Stamp, Chair
2110 Summer St.
Bristol, NH 03222

Re: Shoreland Permit Application – The Northern Pass Project

Dear Mr. Stamp:

Enclosed please find a copy of the Shoreland Permit Application package that will be filed with the NH Department of Environmental Services (DES) and New Hampshire Site Evaluation Committee for the Northern Pass Project. This is an update to a previously submitted application that includes one or more additional work locations within a protected shoreland of a public water or Designated River in your regulatory area. Under state law, it is a requirement to provide the municipalities and Local River Advisory Committees having jurisdiction over these waterbodies with a copy of the shoreland application by Certified mail, for review and comment.

Sincerely,

Lee Carbonneau
Normandeau Associates, Inc.
As agent for Northern Pass Transmission, LLC.



Via Certified Mail

April 28, 2016

Town of Woodstock
165 Lost River Rd
Woodstock, NH 03262

Re: Shoreland Permit Application – The Northern Pass Project

Dear Sir or Madam:

Enclosed please find a copy of the Shoreland Permit Application package that will be filed with the NH Department of Environmental Services (DES) and New Hampshire Site Evaluation Committee for the Northern Pass Project. This is an update to a previously submitted application that includes one or more additional work locations within the protected shoreland of a public water or Designated River in your regulatory area. Under state law, it is a requirement to provide the municipalities and Local River Advisory Committees having jurisdiction over these waterbodies with a copy of the shoreland application by Certified mail, for review and comment.

Sincerely,

Lee Carbonneau
Normandeau Associates, Inc.
As agent for Northern Pass Transmission, LLC.

**Shoreland Permit Application
Northern Pass
Pemigewasset River, Woodstock, NH
(Revised)**

Prepared for
Northern Pass Transmission, LLC and
Public Service Company of New Hampshire
d/b/a Eversource Energy
Energy Park
780 Commercial Street
Manchester, NH 03101

May 2016

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DISCLOSURE STATEMENT

The data contained in all pages of this document have been submitted in confidence and contain trade secrets and/or privileged or confidential information, and such data shall be used or disclosed only for evaluation purposes, provided that if a contract is awarded to this proposer as a result of or in connection with the submission of this proposal, the client shall have the right to use or disclose the data herein to the extent provided in the contract. This document includes data that shall not be disclosed outside of the purposes of this submittal and shall not be duplicated, used, or disclosed—in whole or in part—for any purpose other than for evaluation purposes.

1.0 Shoreland Permit Application

Pemigewasset River

NHDES-W-06-037



NHDES-W-06-037

SHORELAND PERMIT APPLICATION

Water Division/ Shoreland Program

Land Resources Management

Check the status of your application: www.des.nh.gov/onestop



RSA/Rule: RSA 483-B, Env-Wq 1400

Administrative Use Only	Administrative Use Only	Administrative Use Only	File Number:
			Check No.
			Amount:
			Initials:

This is an application for a permit to excavate, fill or construct new structures within the protected shoreland as regulated under RSA 483-B. For a complete list of activities that do not require a shoreland permit, view the shoreland program [frequently asked questions](#) (FAQs)

Please type or print clearly. **Please note:** Application packages missing required elements will be returned to the applicant in their entirety, including the fee. Land Resources Management will include a letter identifying the missing elements and describing how to resubmit the application package to NHDES. Application packages that are accepted will proceed to technical review to ensure the applicant has fulfilled all requirements as specified by statute or rules. For more information visit the [New Land Resources Management Application Return Process](#) site located on the Shoreland Program Page.

1. PROPERTY OWNER			
LAST NAME, FIRST NAME, M.I.: NH Department of Transportation, c/o Alan Hanscom, District 3 Engineer, and Philip Beaulieu, District 1 Engineer			
ADDRESS: 2 Sawmill Road 461 Main St		TOWN/CITY: Gilford Lancaster	STATE: NH ZIPCODE: 03246 03584
PHONE: (603) 524-6667, (603) 788-4641		EMAIL:	
2. PROJECT LOCATION			
ADDRESS: Multiple		TOWN/CITY: Woodstock	STATE: NH ZIPCODE: 03285
WATERBODY NAME: Pemigewasset River		TAX MAP: Multiple	LOT NUMBER: Multiple
3. CONTRACTOR OR AGENT			
LAST NAME, FIRST NAME, M.I.: Carboneau, Lee E.			
ADDRESS: 25 Nashua Rd.		TOWN/CITY: Bedford	STATE: NH ZIPCODE: 03110
PHONE: 603-637-1150		EMAIL: lcarboneau@normandeau.com	
4. CRITERIA			
Please check at least one of the following below:			
<input checked="" type="checkbox"/> This shoreland permit application requires neither a proposal to make the property more nearly conforming nor a request for a waiver of a minimum standard.			
<input type="checkbox"/> This shoreland permit application includes a proposal to make the structures and/ or the property more nearly conforming in accordance with RSA 483-B:11			
<input type="checkbox"/> This shoreland permit application includes a request for a waiver of the following minimum standard(s) under RSA 483-B:9, V_____			

shoreland@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

5. PROJECT DESCRIPTION

Total Square feet of impact 45,198 Total square feet of new impervious area 0

Provide a complete description of the proposed project. **A new high voltage transmission line will be constructed in an existing road ROW. The Woodstock Project area includes seven Shoreland locations along the Pemigewasset River. Work in the Shoreland includes the underground installation of transmission cable, as shown in the project plans. To place the line, the road bed or shoulder of NH Route 3 will be trenched, the line will be placed, and the trench will be backfilled to restore these work areas after construction. In addition, no tree clearing is planned within the existing road ROW.**

6. PERMIT APPLICATIONS SUBMITTED

Please indicate if applications for any of the permits listed below have been submitted or will need to be submitted:

- ☒ Wetlands Permit per RSA 482-A
 ☐ Individual Sewage Disposal System per RSA 485-A:29
☒ Alteration of Terrain Permit Per RSA 485-A:17
 ☐ Subdivision Permit Per RSA 485-A:29

7. REFERENCE LINE ELEVATION (REQUIRED FOR LAKES, PONDS, AND ARTIFICIAL IMPOUNDMENTS)

Reference line elevations for most lakes, ponds and artificial impoundments greater than 10 acres in size are listed in the [Consolidated List of Waterbodies Subject to the Shoreland Water Quality Protection Act](#). Please see RSA 483-B:4, xvii for the definition of reference line.

The reference line for this waterbody is N/A Feet above sea level.

8. SHORELAND FRONTAGE Shoreland frontage is the actual frontage along the waterfront measured at the reference line.

The shoreland frontage on this lot is : _____ Linear Feet

☒ N/A – No Direct frontage on this lot

9. APPLICATION FEE

A non-refundable permit application fee of \$100 plus \$0.10 per total square foot of is required at the time the application is submitted. Fees are capped at \$750 for projects impacting less than 10,000 sq ft, \$1,875 for projects impacting between 10,000 and less than 25,000 sq ft, and \$3,750 for projects impacting 25,000 sq ft and greater. Please note that your application will not be considered complete if it does not include the appropriate fee. **Please make checks payable to the Treasurer, State of NH.**

10. CALCULATING THE TOTAL IMPACT AREA AND PERMIT APPLICATION FEE

Total impact area is calculated by determining the sum of all areas disturbed by regrading, excavation, filling, construction, and structure removal. Impacts often include, but are not limited to: constructing new driveways, constructing new structures, areas disturbed when installing a new septic system or foundation, creating temporary access roads for the purpose of installing a well and regrading associated with landscaping activities.


Total Area Impacted within 250 Feet of the Reference Line. = 45,198 (A) Square Feet


Multiply the total Impact Area By 10¢ and add \$100.00. [(A) X .10 + \$100.00] = Exempt per 483-B:5-b III **Permit Fee**

11. REQUIRED CERTIFICATIONS

By initialing within the blank before each of the following statements, and signing below, you are certifying that: to the best of my knowledge, the information provided is true, complete and not misleading.

 I understand that any permit or waiver granted based on false, incomplete, or misleading information shall be subject to revocation.

 I am aware that obtaining a shoreland permit will not exempt the work I am proposing from other state, local or federal approvals.

 I have notified the municipality or municipalities in which the proposed impacts are located and provided them with a complete copy of the application and all supporting materials on / / via certified mail.

shoreland@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

☒ This project is within ¼ mi of a designated river (river name: Pemigewasset River) and I have notified the Local River Management Advisory Committee by providing them with a copy of the complete application, including all supporting materials, via certified mail on day: ___ month: ___ year: ___ and I have included a copy of the certified mail receipt in the application submittal (RSA 482-A:3,i(d)(2))

☐ This project is **not** within ¼ mi of a designated river

N/A I have notified all abutters of the proposed impacts via certified mail as required by RSA 483-B:5-b, iv-a. (see definition of "abutter" on page (6).
Exempt per RSA-483-B:5-b, IV (A)

12. SIGNATURES (Both must sign per Env-Wq 1406.08)

OWNER NAME		PRINT NAME LEGIBLY: NH Department of Transportation, c/o Alan Hanscom	DATE: 5/3/16
OWNER NAME		PRINT NAME LEGIBLY: NH Department of Transportation, c/o Philip Beaulieu	DATE: 5/3/16
APPLICANT NAME		PRINT NAME LEGIBLY: Northern Pass LLC, c/o Robert P. Clarke, Project Director	DATE: 5/3/16

Please mail this application and all other attachments to the Department of Environmental Services Wetlands Bureau, PO Box 95, Concord NH 03302-0095. Missing information will delay processing of your application and may result in denial of a Shoreland Permit.

SHORELAND APPLICATION WORKSHEET

This form must be submitted to the Department of Environmental Services Wetlands Bureau accompanied with a Shoreland Permit Application. [Instructions for completing this form](#) are available on the shoreland program web page.

For the purposes of this worksheet, “**Pre-Construction**” impervious surface areas¹ means all human made impervious surfaces² currently in existence on the property, whether to be removed or to remain after the project is completed. “**Post-Construction**” impervious area means all impervious surfaces that will exist on the property upon completion of the project, including both new and any remaining pre-existing impervious surfaces. All answers shall be given in square feet.

CALCULATING THE IMPERVIOUS AREA WITHIN 250 FEET OF THE REFERENCE LINE			
	STRUCTURE DESCRIPTION	PRE-CONSTRUCTION IMPERVIOUS AREA	POST-CONSTRUCTION IMPERVIOUS AREA
PRIMARY STRUCTURE Include all <u>attached</u> decks and porches.	_____	<u>0</u> FT ²	<u>0</u> FT ²
ACCESSORY STRUCTURES All other impervious surfaces excluding lawn furniture, well heads, and fences. Common accessory structures include, but are not limited to: driveways, walkways, patios and sheds.	<u>Route 3</u> _____ _____ _____ _____ _____	<u>171,164</u> FT ² _____ FT ² _____ FT ² _____ FT ² _____ FT ² _____ FT ²	<u>171,164</u> FT ² _____ FT ² _____ FT ² _____ FT ² _____ FT ² _____ FT ²
TOTAL:		(A) <u>171,164</u> FT²	(B) <u>171,164</u> FT²
Area of the lot located within 250 ft of reference line:			(C) <u>715,461</u> FT²
Percentage of lot covered by pre-construction impervious area within 250 ft of the reference line: <i>[divide (a) by (c) x 100]</i>			(D) <u>23.92</u> %

¹ “**Impervious surface area**” as defined in Env-Wq 1402.15 means, for purposes of the impervious surface limitation specified in RSA 483-B:9, V(g), the sum total of the footprint of each impervious surface that is located within the protected shoreland.

² “**Impervious Surface**” as defined in RSA 483-B:4, VII-b means any modified surface that cannot effectively absorb or infiltrate water. Examples of impervious surfaces include, but are not limited to, roofs, and unless designed to effectively absorb or infiltrate water, decks, patios, and paved, gravel, or crushed stone driveways, parking areas, and walkways.

Percentage of lot to be covered by post-construction impervious area within 250 ft of the reference line upon completion of the project: [divide (b) by (c) x 100]	(E) <u>23.92</u> %
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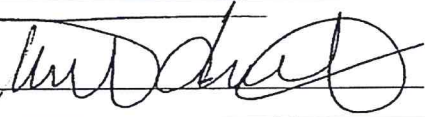
IMPERVIOUS AREA THRESHOLDS

DETERMINING THE PLAN REQUIREMENTS	
<input checked="" type="checkbox"/>	<p>The percentage of post-construction impervious area (Calculation E) is less than or equal to 20%.*</p> <p>This project does not require a stormwater management plan and does not require a plan demonstrating that each waterfront buffer grid segment at least meets the minimum required tree and sapling point score.</p> <p>*The current impervious area is >20% but the net increase in impervious surface is 0</p>
<input type="checkbox"/>	<p>A net increase in impervious area is proposed and the percentage of post-construction impervious area (Calculation E) is greater than 20%, but less than 30%.</p> <p>This project requires a stormwater management but, does not require a plan demonstrating that each waterfront buffer grid segment at least meets the minimum required tree and sapling point score.</p> <p>See details on the <i>Checklist of Required Items</i> on page 6</p>
<input type="checkbox"/>	<p>A net increase in impervious area is proposed and the percentage of post-construction impervious area (Calculation E) is greater than 30%</p> <p>This project requires a stormwater management plan be designed and certified by a professional engineer and requires plans demonstrating that each waterfront buffer grid segment at least meets the minimum required tree and sapling point score.</p> <p>See details on the <i>Checklist of Required Items</i> on page 6</p>

UNALTERED STATE REQUIREMENT

DETERMINING THE AREA TO REMAIN IN AN UNALTERED STATE	
Total area of the lot between 50 ft and 150 ft of the reference line within which the vegetation currently exists in an unaltered state ³ (see definition below). If this area is completely altered, place a zero on line (F) and (I) and proceed to (J).	(F) <u>0</u>
Total area of the lot between 50 ft and 150 ft from the reference line	(G) _____
At least 25 percent of the vegetation within area (G) must remain in an unaltered state. [.25 x G]	(H) _____
Place the smaller of line (F) and calculation (H) on this line. In order to remain compliant with RSA 483-B:9, V(b), this is the minimum area that must remain in an unaltered state between 50 ft and 150 ft from the reference line. This area must be represented on all plans.	(I) _____

³ "Unaltered State" means native vegetation allowed to grow without cutting, limbing, trimming, pruning, mowing, or other similar activities except as needed for renewal or to maintain or improve plant health.

Name of person who prepared this worksheet:	(J) <u>Tracy Coolidge</u>
Name and date of the plan this worksheet is based upon:	(K) <u>NHDES Shoreland Permit Application Plans Woodstock, NH 4/21/2016</u>
SIGNATURE: 	DATE: 4/22/2016

Unaltered State section. The shoulder and travel way of a public road must be maintained for safety and operational purposes, and therefore there will always be little or no unaltered land in the project location within the road ROW. Therefore no calculations for this metric were performed. Furthermore, RSA 483-B:9 IV-b. states "Public utility lines and associated structures and facilities, public roads, and public water access facilities including boat ramps shall be permitted by the commissioner as necessary and consistent with the purposes of this chapter and other state law." In addition, RSA 483-B:2 XVI provides for economic development in proximity to waters.

2.0 Copy of Check for Application Fee

N/A, per RSA 483-B:5-b-III. Construction of public roads, public utility lines and associated structures and facilities, and public water access facilities shall be exempt from the permitting fees of paragraph I and the abutter notification requirements of paragraph IV-a.

3.0 Project Specific Work within the Protected Shoreland

The Northern Pass project area extends from the international border of Canada and the United States in Pittsburg, New Hampshire to Londonderry, New Hampshire. The Project will require work within the 250 foot protected shoreland of multiple waterbodies. This application includes information related to the work within an existing road ROW that intersects the protected shoreland of the Pemigewasset River in Woodstock, NH at seven locations. The Pemigewasset River in Woodstock is within the UG1 (underground) portion of the Project.

The Project seeks use existing transmission and road ROW in order to minimize environmental and other impacts of the Project. The underground transmission line will be located within the roadbed or shoulder of NH Route 3 and should not require limbing or tree cutting for installation as this area is already a maintained ROW. There will be no increase in impervious area.

Underground cables will be installed using a combination of construction techniques including direct bury of the cable, installation of the cable in a duct bank, or the use of trenchless technology (directional boring and jack and bore). These techniques result in cables being buried at different depths. Direct-buried cable is installed approximately four feet below grade. The depth of duct banks varies, but these will have at least 2.5 feet of cover. Cables installed via jack and bore will be approximately 10 to 15 feet below grade. Directional boring sections will be installed at a maximum depth of approximately 65 feet below grade, and will be used primarily for crossing under large perennial streams and rivers. Exact depths may be adjusted during final design. Jack and bore and directional bore require installation pits for construction. Direct bury and duct bank installations require permanent splice boxes or vaults spaced approximately every 1,800 feet to allow for maintenance.

One Splice box will be installed along segments of the underground line in these areas to allow for repair and replacement as necessary over time to maintain integrity of the line. Erosion control will be installed along of the shore of the Pemigewasset River to prevent impacts. The NH Natural Heritage Bureau identified four element occurrences within a half mile of the Protected Shoreland of the Pemigewasset River in Woodstock, NH. NHB identified the S3 state ranked high-gradient rocky riverbank natural community, the S1S3 *Cicindela ancocisconensis* (a Tiger Beetle), the S3 *Opheodrys vernalis* (smooth green snake), and the S1 Bat Hibernaculum. The project is unlikely to impact the plant communities, tiger beetle or snake, as all work will take place within the road way or disturbed shoulder. If blasting is required near the bat hibernaculum, NPT will work with state and federal wildlife agencies to insure that proper protections, including possibly timing restrictions for this activity, are followed.

3.1 Pemigewasset River Shoreland Site 1

The Pemigewasset River within this shoreland buffer is classified as a fifth order river (R3UB1) with an unconsolidated bottom composed of cobble-gravel. At site 1, the River varies in width along the underground corridor and at this location is approximately 60 feet in width.

The land in vicinity of the river at site 1 is NH Route 3, owned by the State of New Hampshire Department of Transportation, and the surrounding area is part of downtown Woodstock. The land in the vicinity of the underground line work includes residential and commercial properties bordering Route 3. An underground cable will be installed within 250 feet of the River and will be set in place by trenching within the town as shown in the project plans (Appendix A). Erosion control will be installed along the shoreline to prevent impacts where appropriate.

Pemigewasset River Shoreland Site 1	0'-50' Waterfront Buffer	50'-150' Natural Woodland Buffer	150'-250' Shoreland Buffer	Total Impacts at Shoreland Crossing
Temporary Impacts	0 sq. ft.	0 sq. ft.	7,099 sq. ft. Trenching	7,099 sq. ft. Trenching
Permanent Impacts	0 sq. ft.	0 sq. ft.	0 sq. ft.	0 sq. ft.
Pre-Construction Impervious Surface Area	0 sq. ft.	3,305 sq. ft. Route 3	33,997 sq. ft. Route 3	37,302 sq. ft. Route 3
Post-Construction Impervious Surface Area	0 sq. ft.	3,305 sq. ft. Route 3	33,997 sq. ft. Route 3	37,302 sq. ft. Route 3

3.2 Pemigewasset River Shoreland Site 2

The Pemigewasset River at this location is approximately 375 feet in width.

The land in vicinity of the river at this Shoreland site is NH Route 3 and is owned by the State of New Hampshire Department of Transportation. The land in the vicinity of the underground line work includes residential and commercial properties bordering Route 3. An underground cable will be installed within 250 feet of the River and will be set in place by trenching or directionally drilling under water bodies as needed within the town. One area in Woodstock will require the engineers to directionally drill under the Pemigewasset within the Shoreland Buffer as shown in the project plans (Appendix A). BMPs will be followed, and where appropriate, erosion/sediment controls will be installed to prevent the movement of sediment to nearby water resources.

Pemigewasset River Shoreland Site 2	0'-50' Waterfront Buffer	50'-150' Natural Woodland Buffer	150'-250' Shoreland Buffer	Total Impacts at Shoreland Crossing
Temporary Impacts	0 sq. ft.	7,674 sq. ft. trenching	4,447 sq. ft. trenching, drilling	12,121 sq. ft. trenching, drilling
Permanent Impacts	0 sq. ft.	0 sq. ft.	0 sq. ft.	0 sq. ft.
Pre-Construction Impervious Surface Area	84 sq. ft.	41,965 sq. ft.	19,923 sq. ft.	61,972 sq. ft.
Post-Construction Impervious Surface Area	84 sq. ft.	41,965 sq. ft.	19,923 sq. ft.	61,972 sq. ft.

3.3 Pemigewasset River Shoreland Site 3

The Pemigewasset River at this location is approximately 225 feet in width. The land in vicinity of the river at this Shoreland site is NH Route 3 and is owned by the State of New Hampshire Department of Transportation. The land in the vicinity of the underground line work includes residential and commercial properties bordering Route 3. An underground cable will be installed within 250 feet of the River and will be set in place by trenching within the town as shown in the project plans (Attachment A). BMPs will be followed, and where appropriate, erosion/sediment controls will be installed to prevent the movement of sediment to nearby water resources.

Pemigewasset River Shoreland Site 3	0'-50' Waterfront Buffer	50'-150' Natural Woodland Buffer	150'-250' Shoreland Buffer	Total Impacts at Shoreland Crossing
Temporary Impacts	0 sq. ft.	0 sq. ft.	3,282 sq. ft. trenching	3,282 sq. ft. trenching
Permanent Impacts	0 sq. ft.	0 sq. ft.	0 sq. ft.	0 sq. ft.
Pre-Construction Impervious Surface Area	0 sq. ft.	0 sq. ft.	10,697 sq. ft.	10,697 sq. ft.
Post-Construction Impervious Surface Area	0 sq. ft.	0 sq. ft.	10,697 sq. ft.	10,697 sq. ft.

3.4 Pemigewasset River Shoreland Site 4

The Pemigewasset River at this location is approximately 195 feet in width. The land in vicinity of the river at this Shoreland site is NH Route 3 and is owned by the State of New Hampshire Department of Transportation. The land in the vicinity of the underground line work includes residential and commercial properties bordering Route 3. An underground cable will be installed within 250 feet of the River and will be set in place by trenching within the town as shown in the project plans (Attachment A). BMPs will be followed, and where appropriate, erosion/sediment controls will be installed to prevent the movement of sediment to nearby water resources.

Pemigewasset River Shoreland Site 4	0'-50' Waterfront Buffer	50'-150' Natural Woodland Buffer	150'-250' Shoreland Buffer	Total Impacts at Shoreland Crossing
Temporary Impacts	0 sq. ft.	0 sq. ft.	5,750 sq. ft. trenching	5,750 sq. ft. trenching
Permanent Impacts	0 sq. ft.	0 sq. ft.	0 sq. ft.	0 sq. ft.
Pre-Construction Impervious Surface Area	0 sq. ft.	0 sq. ft.	24,466 sq. ft.	24,466 sq. ft.
Post-Construction Impervious Surface Area	0 sq. ft.	0 sq. ft.	24,466 sq. ft.	24,466 sq. ft.

3.5 Pemigewasset River Shoreland Site 5

The Pemigewasset River varies at this location is approximately 200-500 feet in width (dependent on flow rates). The land in vicinity of the river at this Shoreland site is NH Route 3 and is owned by the State of New Hampshire Department of Transportation. The land in the vicinity of the underground line work includes residential and commercial properties bordering Route 3. An underground cable will be installed within 250 feet of the River and will be set in place by trenching within the town as shown in the project plans (Attachment A). BMPs will be followed, and where appropriate, erosion/sediment controls will be installed to prevent the movement of sediment to nearby water resources.

Pemigewasset River Shoreland Site 5	0'-50' Waterfront Buffer	50'-150' Natural Woodland Buffer	150'-250' Shoreland Buffer	Total Impacts at Shoreland Crossing
Temporary Impacts	0 sq. ft.	0 sq. ft.	3,101 sq. ft. trenching	3,101 sq. ft. trenching
Permanent Impacts	0 sq. ft.	0 sq. ft.	0 sq. ft.	0 sq. ft.
Pre-Construction Impervious Surface Area	0 sq. ft.	0 sq. ft.	8,627 sq. ft.	8,627 sq. ft.
Post-Construction Impervious Surface Area	0 sq. ft.	0 sq. ft.	8,627 sq. ft.	8,627 sq. ft.

3.6 Pemigewasset River Shoreland Site 6

The Pemigewasset River at this location is approximately 150 feet in width. The land in vicinity of the river at this Shoreland site is NH Route 3 and is owned by the State of New Hampshire Department of Transportation. The land in the vicinity of the underground line work includes residential and commercial properties bordering Route 3. An underground cable will be installed within 250 feet of the River and will be set in place by trenching within the town as shown in the project plans (Attachment A). BMPs will be followed, and where appropriate, erosion/sediment controls will be installed to prevent the movement of sediment to nearby water resources.

Pemigewasset River Shoreland Site 6	0'-50' Waterfront Buffer	50'-150' Natural Woodland Buffer	150'-250' Shoreland Buffer	Total Impacts at Shoreland Crossing
Temporary Impacts	0 sq. ft.	0 sq. ft.	10,537 sq. ft. trenching	10,537 sq. ft. trenching
Permanent Impacts	0 sq. ft.	0 sq. ft.	0 sq. ft.	0 sq. ft.
Pre-Construction Impervious Surface Area	0 sq. ft.	0 sq. ft.	22,413 sq. ft.	22,413 sq. ft.
Post-Construction Impervious Surface Area	0 sq. ft.	0 sq. ft.	22,413 sq. ft.	22,413 sq. ft.

3.7 Pemigewasset River Shoreland Site 7

The Pemigewasset River at this location is approximately 195 feet in width. The land in vicinity of the river at this Shoreland site is NH Route 3 and is owned by the State of New Hampshire Department of Transportation. The land in the vicinity of the underground line work includes residential and commercial properties bordering Route 3. An underground cable will be installed within 250 feet of the River and will be set in place by trenching within the town as shown in the project plans (Attachment A). BMPs will be followed, and where appropriate, erosion/sediment controls will be installed to prevent the movement of sediment to nearby water resources.

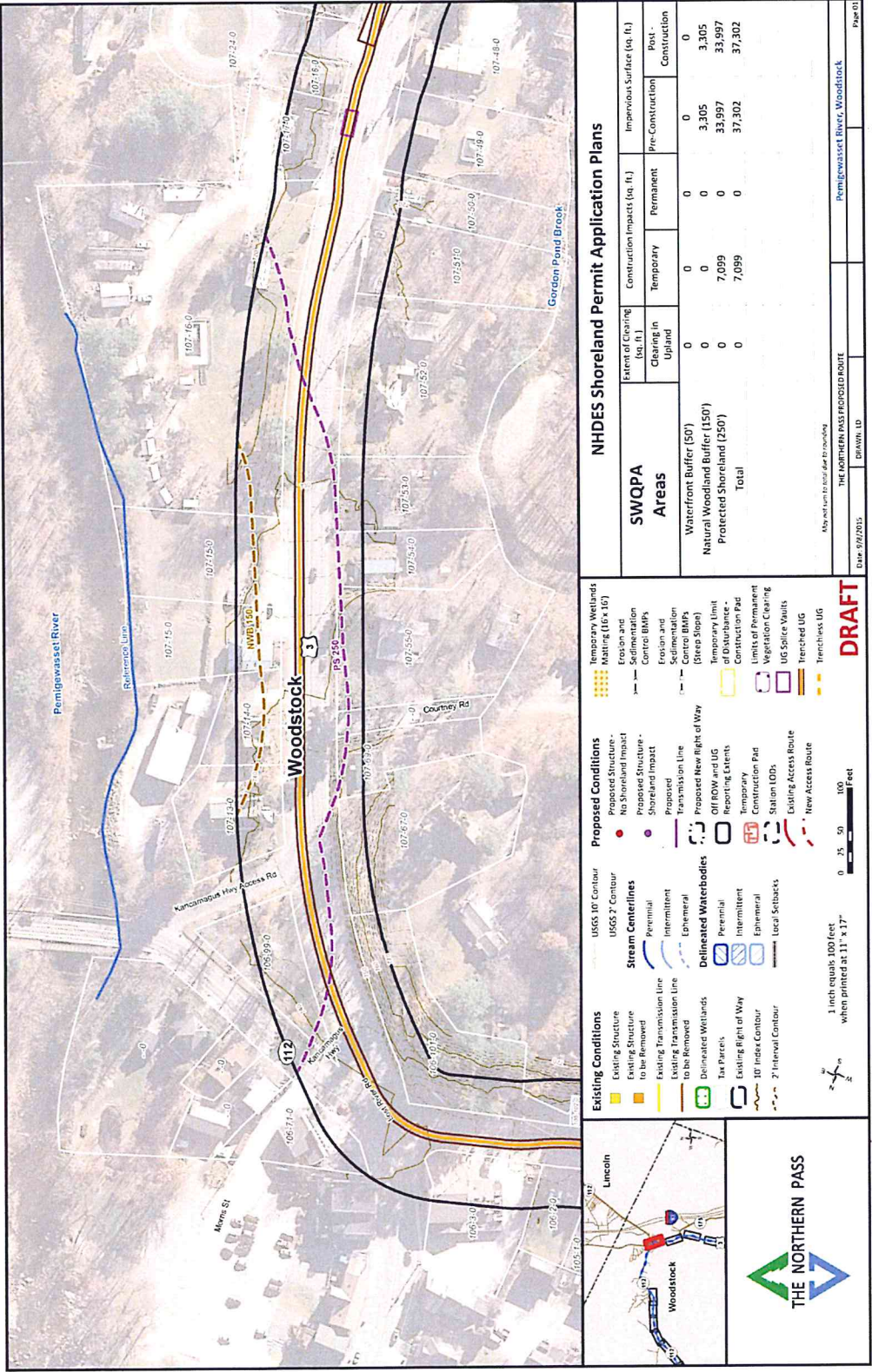
Pemigewasset River Shoreland Site 7	0'-50' Waterfront Buffer	50'-150' Natural Woodland Buffer	150'-250' Shoreland Buffer	Total Impacts at Shoreland Crossing
Temporary Impacts	0 sq. ft.	0 sq. ft.	3,308 sq. ft. trenching	3,308 sq. ft. trenching
Permanent Impacts	0 sq. ft.	0 sq. ft.	0 sq. ft.	0 sq. ft.
Pre-Construction Impervious Surface Area	0 sq. ft.	0 sq. ft.	5,687 sq. ft.	5,687 sq. ft.
Post-Construction Impervious Surface Area	0 sq. ft.	0 sq. ft.	5,687 sq. ft.	5,687 sq. ft.

3.8 Pemigewasset River Shoreland Summary

The proposed work in the shoreland of the Pemigewasset River in Woodstock will take place in the road or shoulder of NH Route 3 which is owned by the State of New Hampshire Department of Transportation. The land in the vicinity of the underground line work includes residential and commercial properties bordering Route 3. An underground cable will be installed within 250 feet of the River and will be set in place by trenching or directionally drilling under water bodies as needed within the town. One area in Woodstock will require the engineers to directionally drill under the Pemigewasset within the Shoreland Buffer (Sheet 33) as shown in the project plans (Attachment A). Erosion control will be installed along the shoreline to prevent impacts where appropriate. No tree clearing or change in impervious surface area will occur.

Pemigewasset River Shoreland Summary	0'-50' Waterfront Buffer	50'-150' Natural Woodland Buffer	150'-250' Shoreland Buffer	Total Impacts at Shoreland Crossing
Temporary Impacts	0 sq. ft.	7,674 sq. ft. trenching	37,524 sq. ft. trenching	45,198 sq. ft. trenching
Permanent Impacts	0 sq. ft.	0 sq. ft.	0 sq. ft.	0 sq. ft.
Pre-Construction Impervious Surface Area	84 sq. ft.	45,270 sq. ft.	125,810 sq. ft.	171,164 sq. ft.
Post-Construction Impervious Surface Area	84 sq. ft.	45,270 sq. ft.	125,810 sq. ft.	171,164 sq. ft.

■ **Appendix A**
Plan Set



Source: NHDOT 2010 and 2011 Aerials, New Hampshire GRANIT GIS Data, Color & Contours, Normandean, Burns & McDaniel

NHDES Shoreland Permit Application Plans

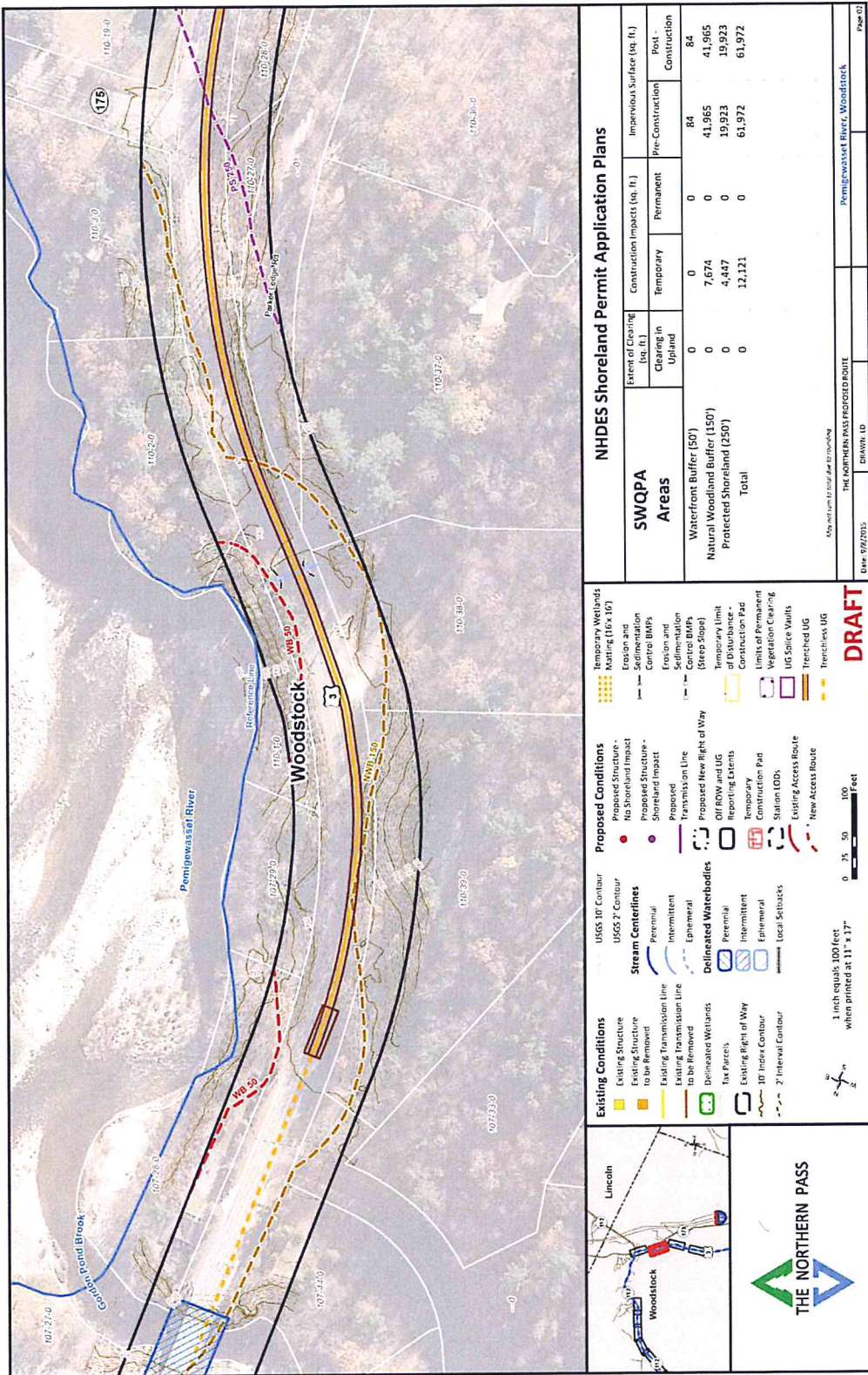
SWQPA Areas	Extent of Clearing (sq. ft.)	Construction Impacts (sq. ft.)		Impervious Surface (sq. ft.)	
		Temporary	Permanent	Pre-Construction	Post-Construction
Waterfront Buffer (50')	0	0	0	0	0
Natural Woodland Buffer (150')	0	0	0	3,305	3,305
Protected Shoreland (250')	0	7,099	0	33,997	33,997
Total	0	7,099	0	37,302	37,302

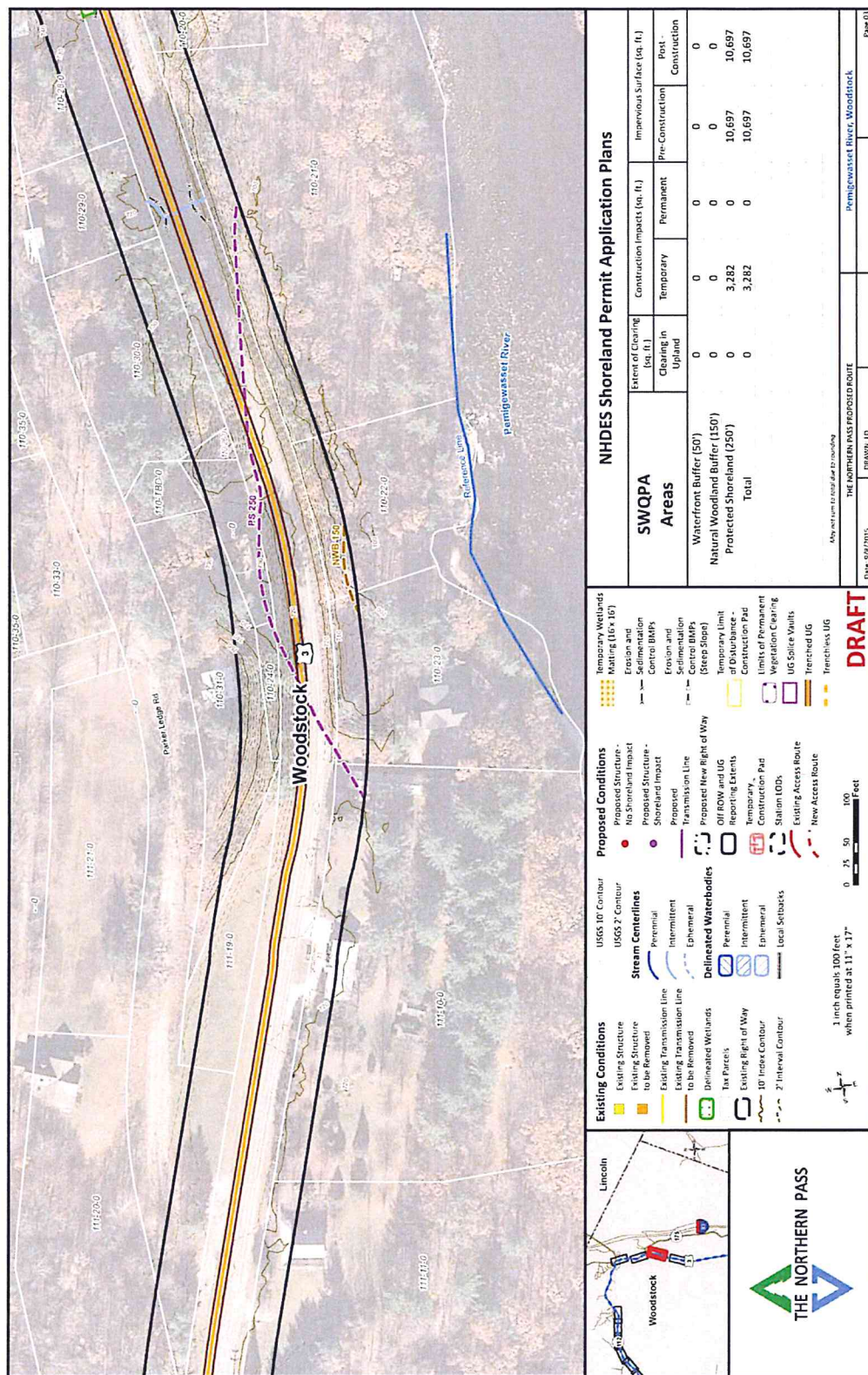
May not sum to total due to rounding

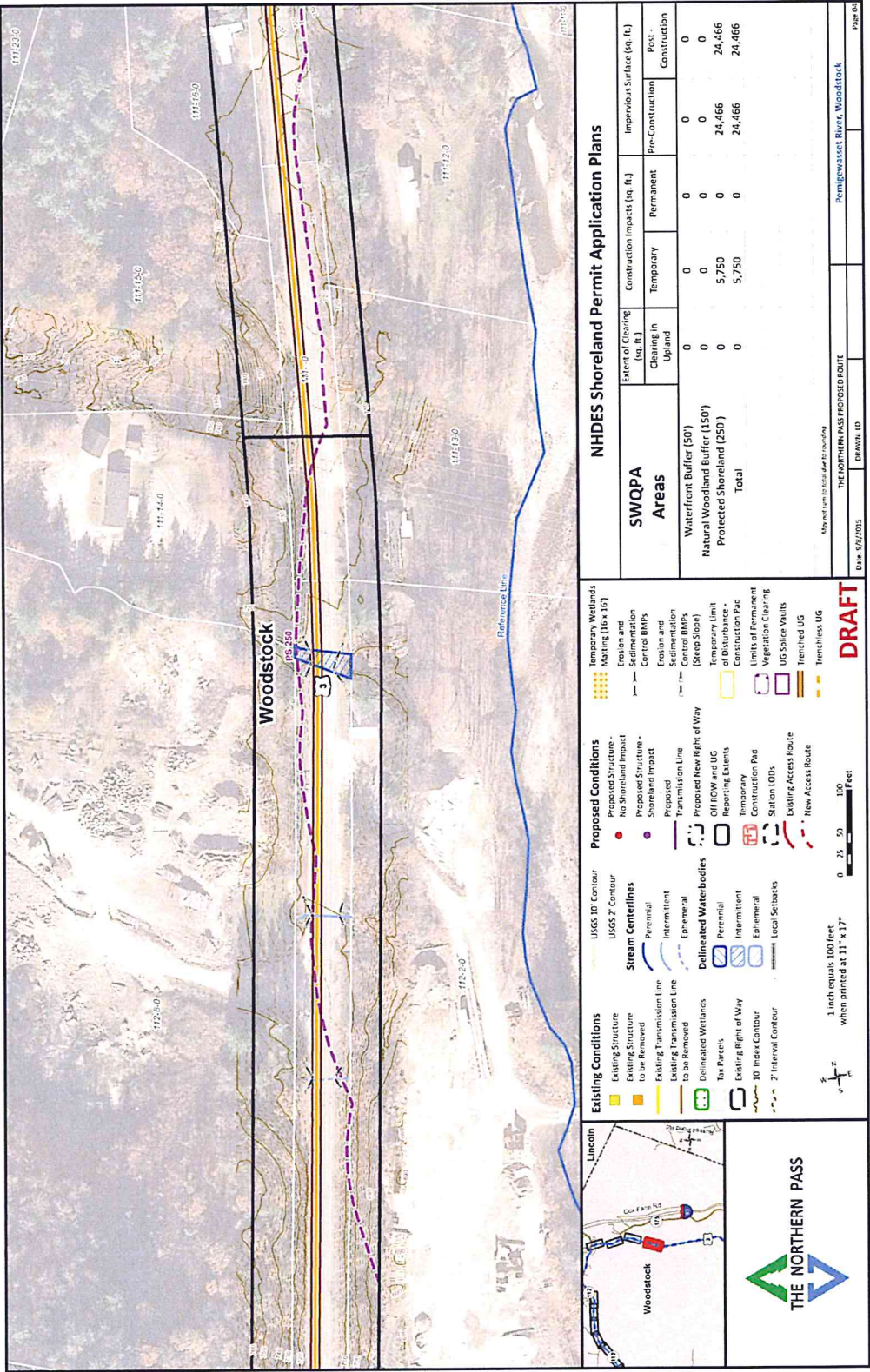
THE NORTHERN PASS PROPOSED ROUTE
SHOWN, LD

Pemigewasset River, Woodstock

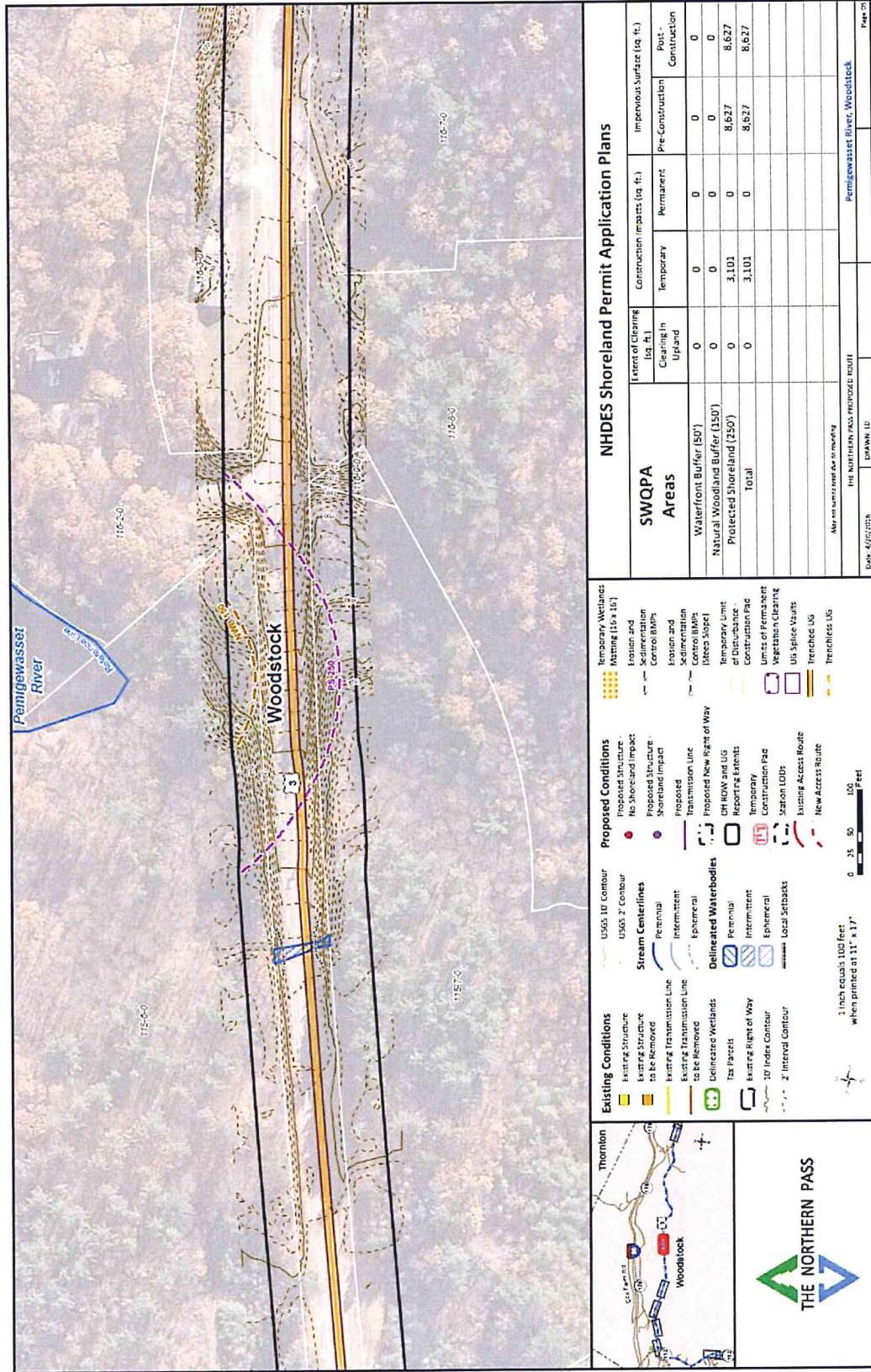
Page 01



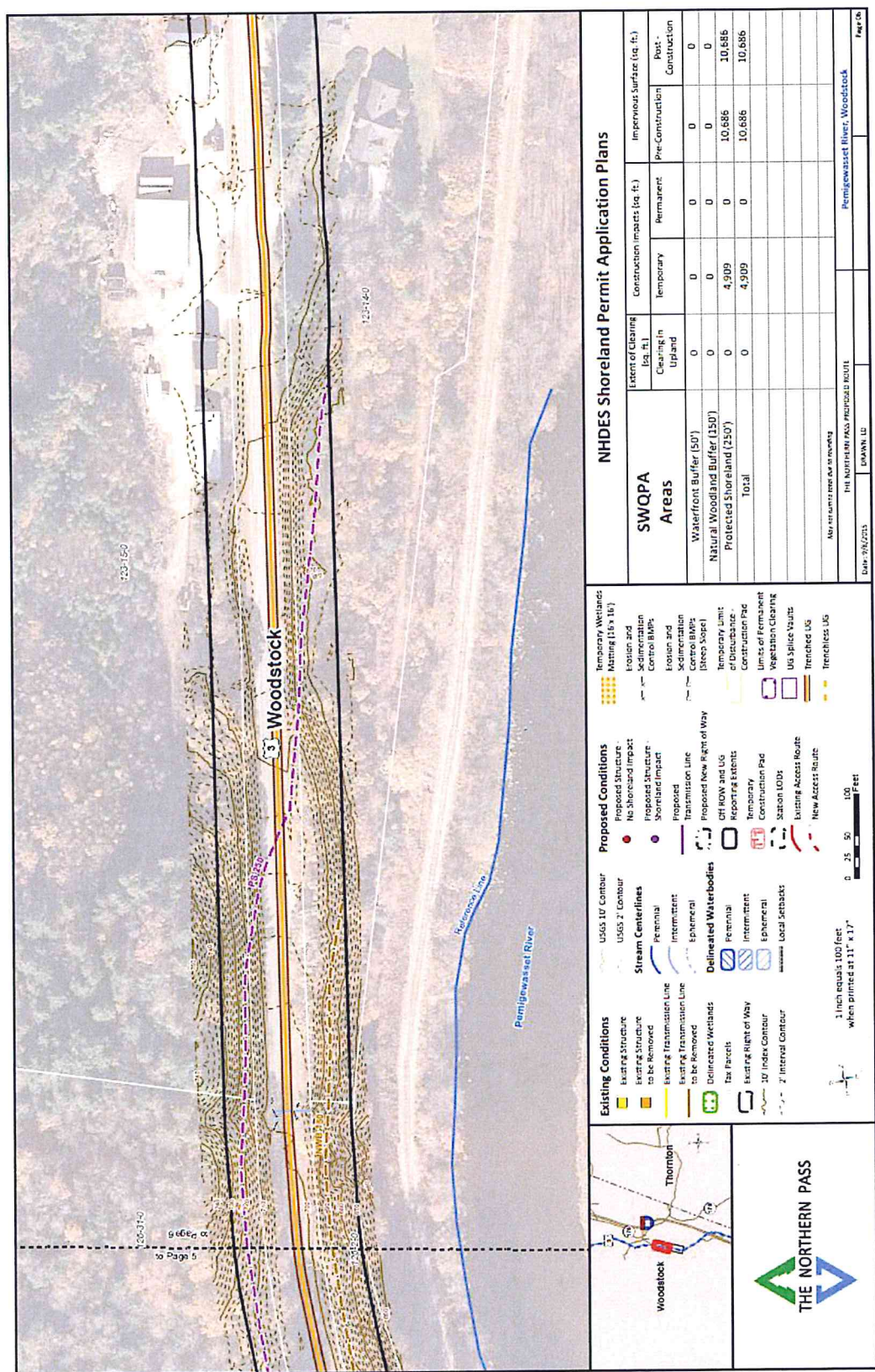


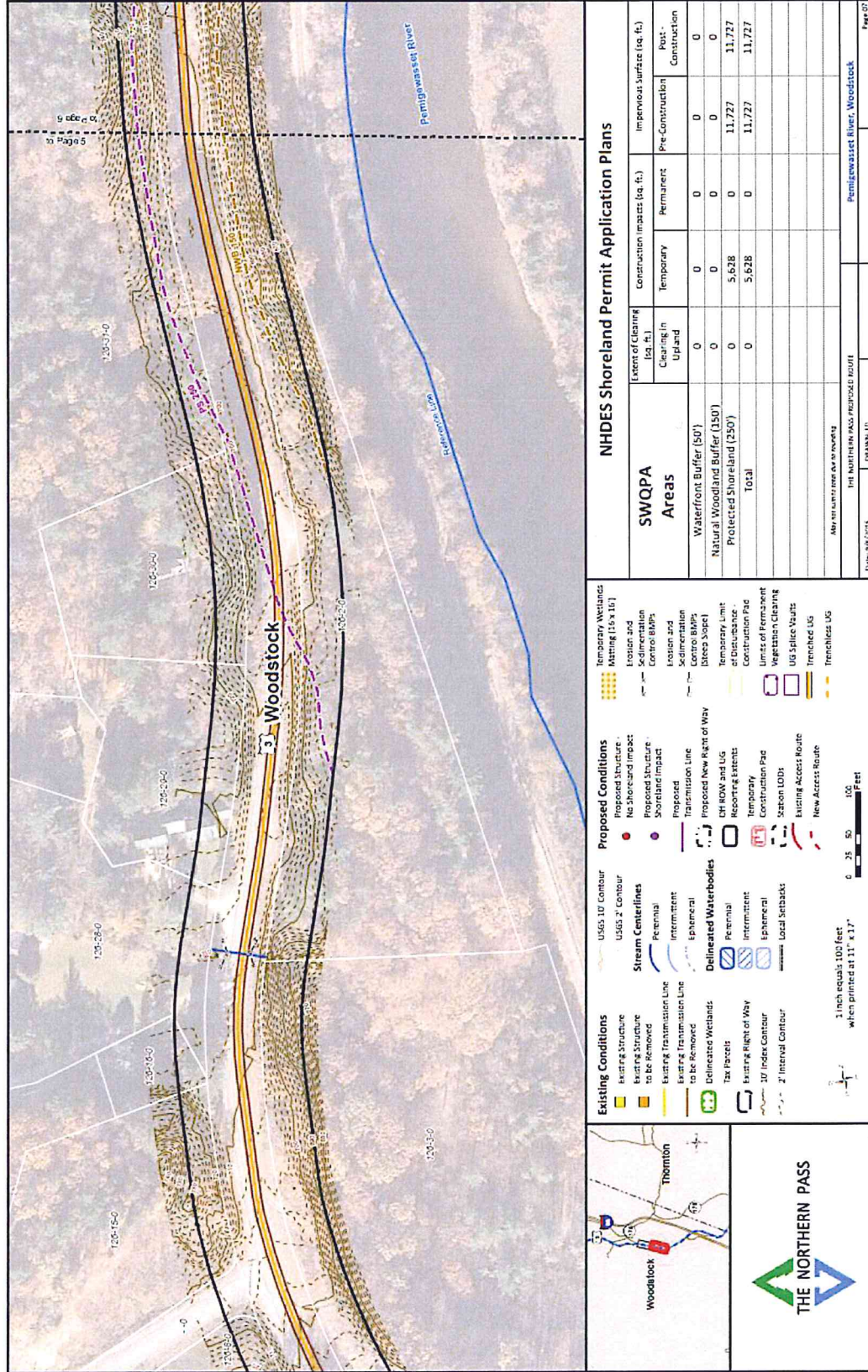


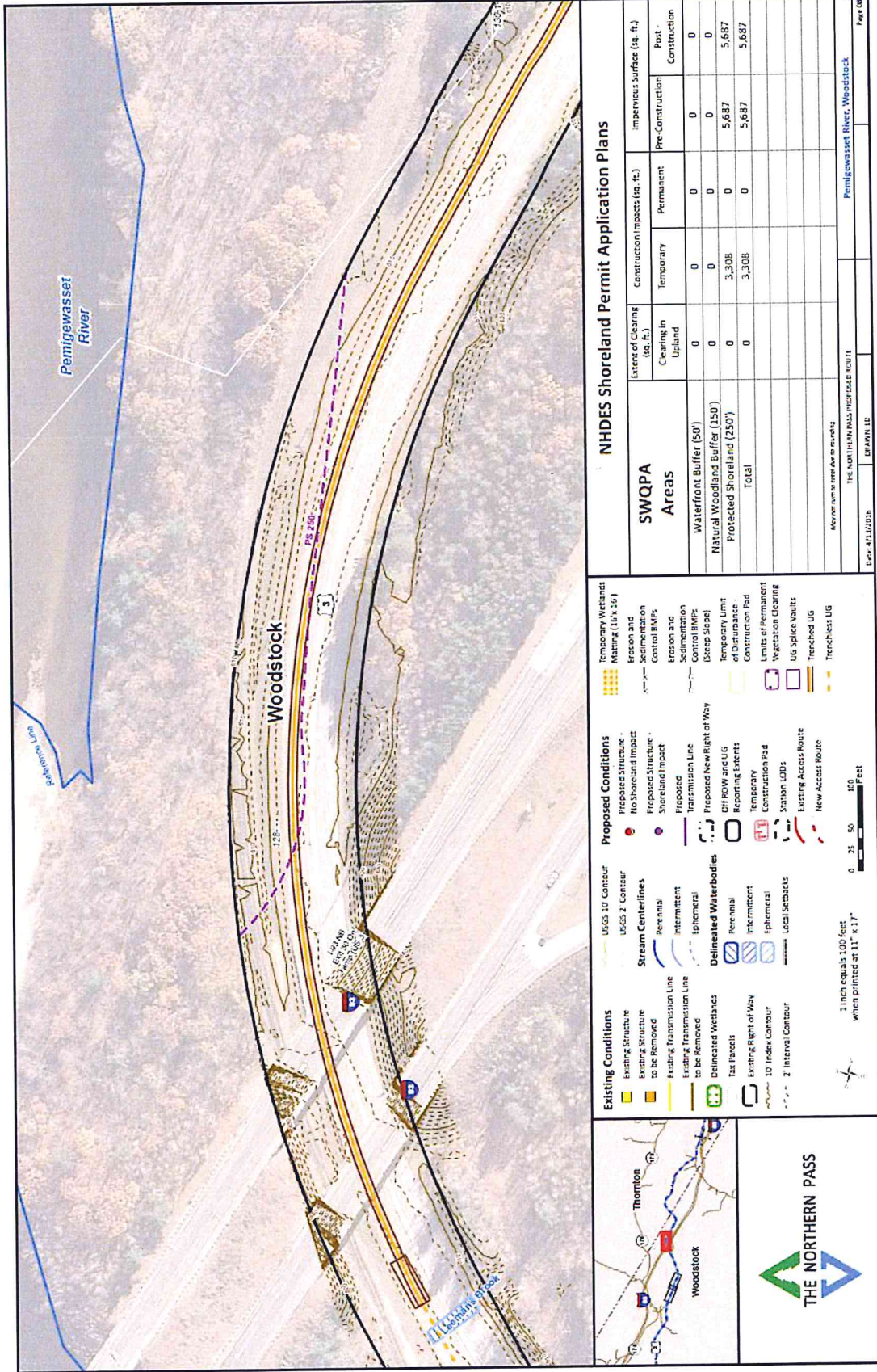
Source: SHDOT 2010 and 2011 Aerials, New Hampshire GRANIT GIS Data, Color & Contours, Normandeau, Harris & McDowell.



Source: NHDOT 100 and 2011 Aerials; New Hampshire GRANT GIS Data; Color & Contours: Normandeau; Burns & McDonnell







NHDES Shoreland Permit Application Plans

SWQPA Areas

SWQPA Areas	Extent of Clearing (sq. ft.)	Construction Impacts (sq. ft.)		Impervious Surface (sq. ft.)	
		Temporary	Permanent	Pre-Construction	Post-Construction
Waterfront Buffer (50')	0	0	0	0	0
Natural Woodland Buffer (150')	0	0	0	0	0
Protected Shoreland (250')	0	3,308	0	5,687	5,687
Total	0	3,308	0	5,687	5,687
May not sum to total due to rounding					
THE NORTHERN PASS PROJECTS: ROUTE 1					
DRAWN BY					
Date: 4/11/2016					
Project: Pemigewasset River, Woodstock					
Page: 01					

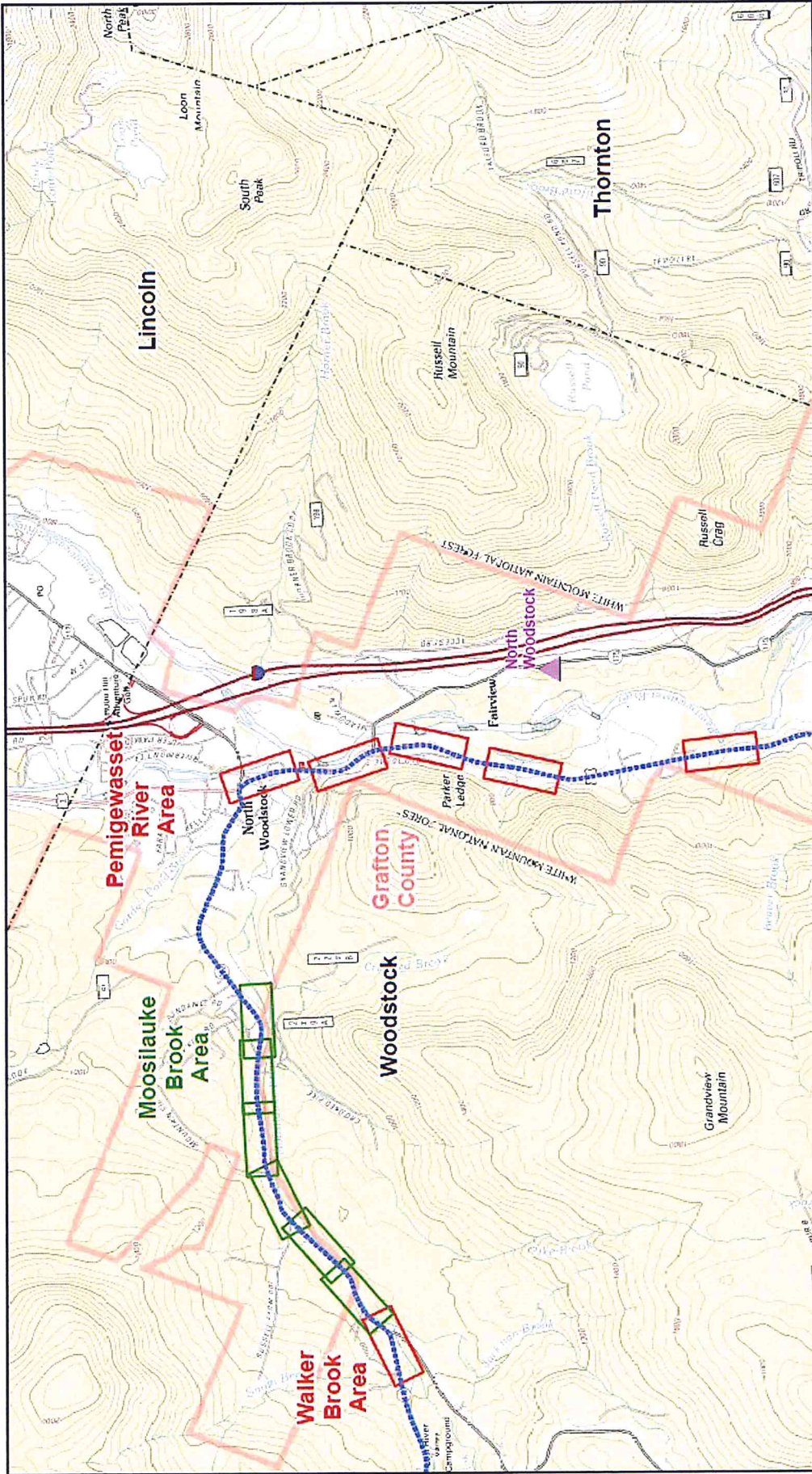
■ Appendix B Property Deeds

NPT will install underground transmission facilities pursuant to authority provided under RSA 231:160, et seq. for use of public highways for various utility purposes.

231:160 Authority to Erect. – Telegraph, television, telephone, electric light and electric power poles and structures and underground conduits and cables, with their respective attachments and appurtenances may be erected, installed and maintained in any public highways and the necessary and proper wires and cables may be supported on such poles and structures or carried across or placed under any such highway by any person, copartnership or corporation as provided in this subdivision and not otherwise.

The NHDOT adopted a Utility Accommodation Manual (hereinafter UAM), dated February 24, 2010, to guide its process for accommodating and licensing utilities within highway and railroad corridors.

■ Appendix C USGS Locus Maps



- Legend**
- Proposed Route (Overhead)
 - Proposed Route (Underground)
 - Deerfield to Scobie Pond Route
 - Proposed Converter Terminal
 - Existing Substation to be Upgraded
 - Existing Substation
 - Proposed Transition Station
 - Municipal Boundary
 - Access Route

Source: USGS Topo, Burns & McDonnell

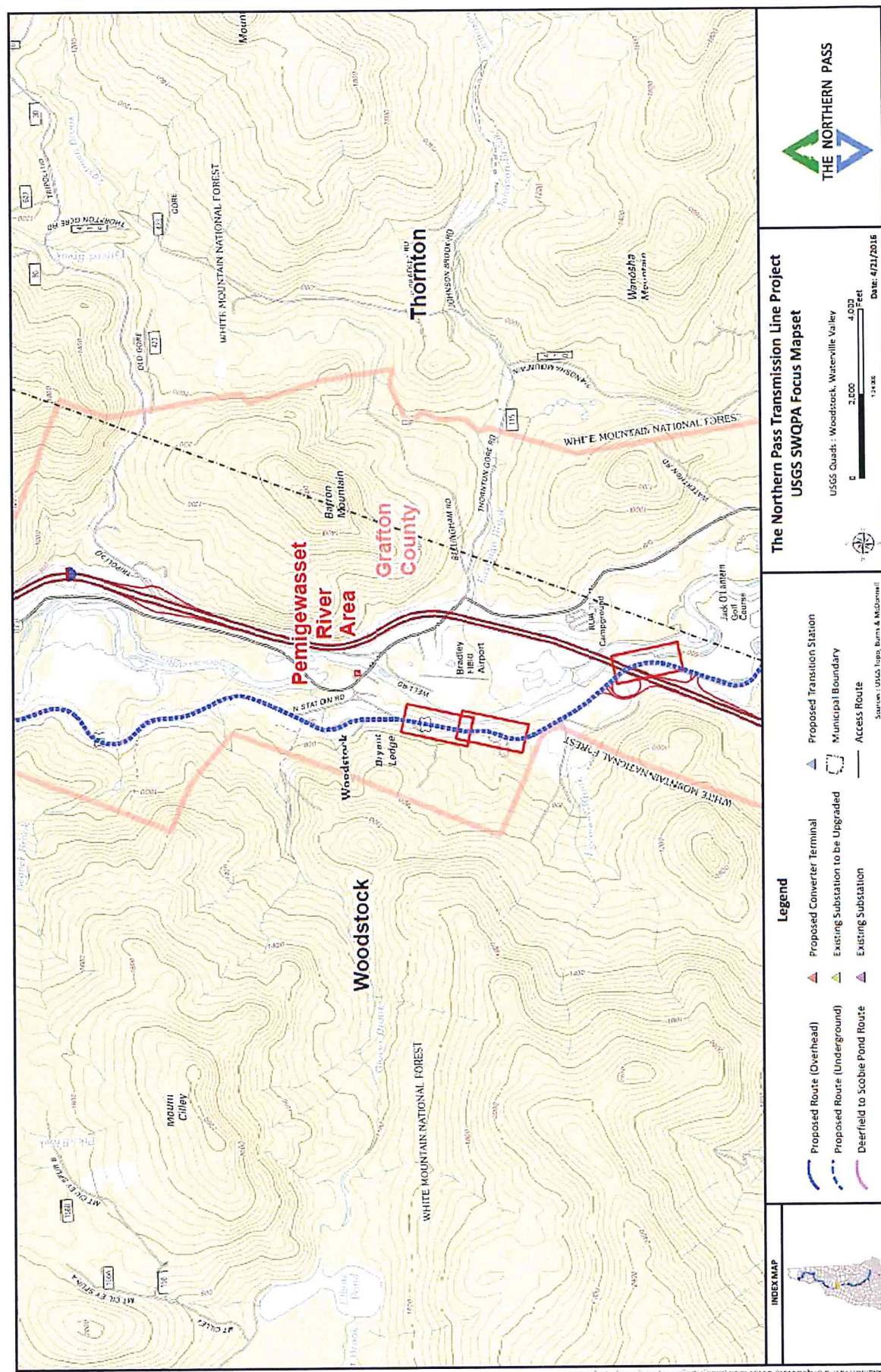
The Northern Pass Transmission Line Project
USGS SWQPA Focus Mapset

USGS Quads: Lincoln, Mount Osceola, Woodstock, Waterville Valley

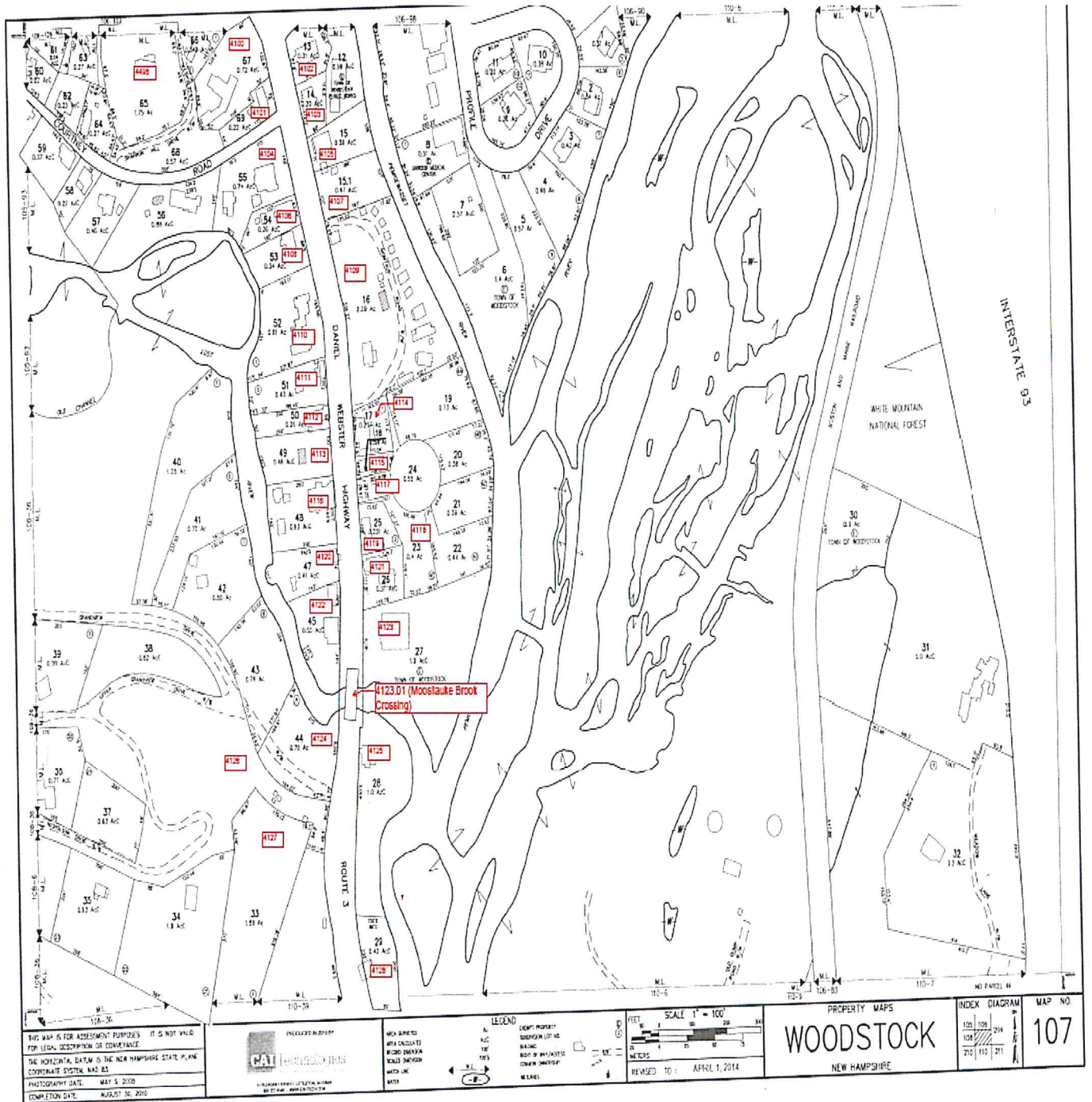
Scale: 1:24,000
 0 2,000 4,000 Feet

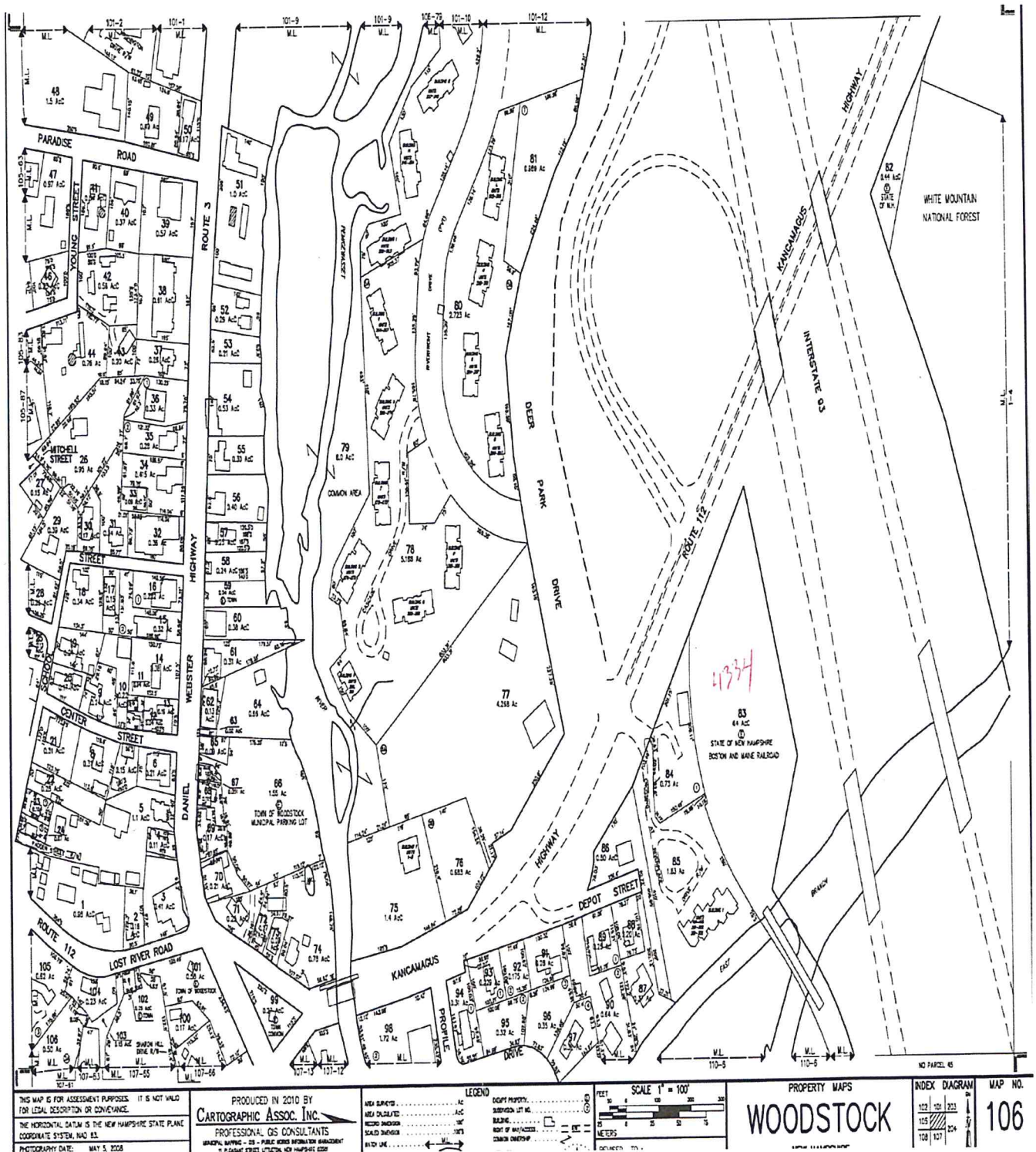
Date: 4/21/2018

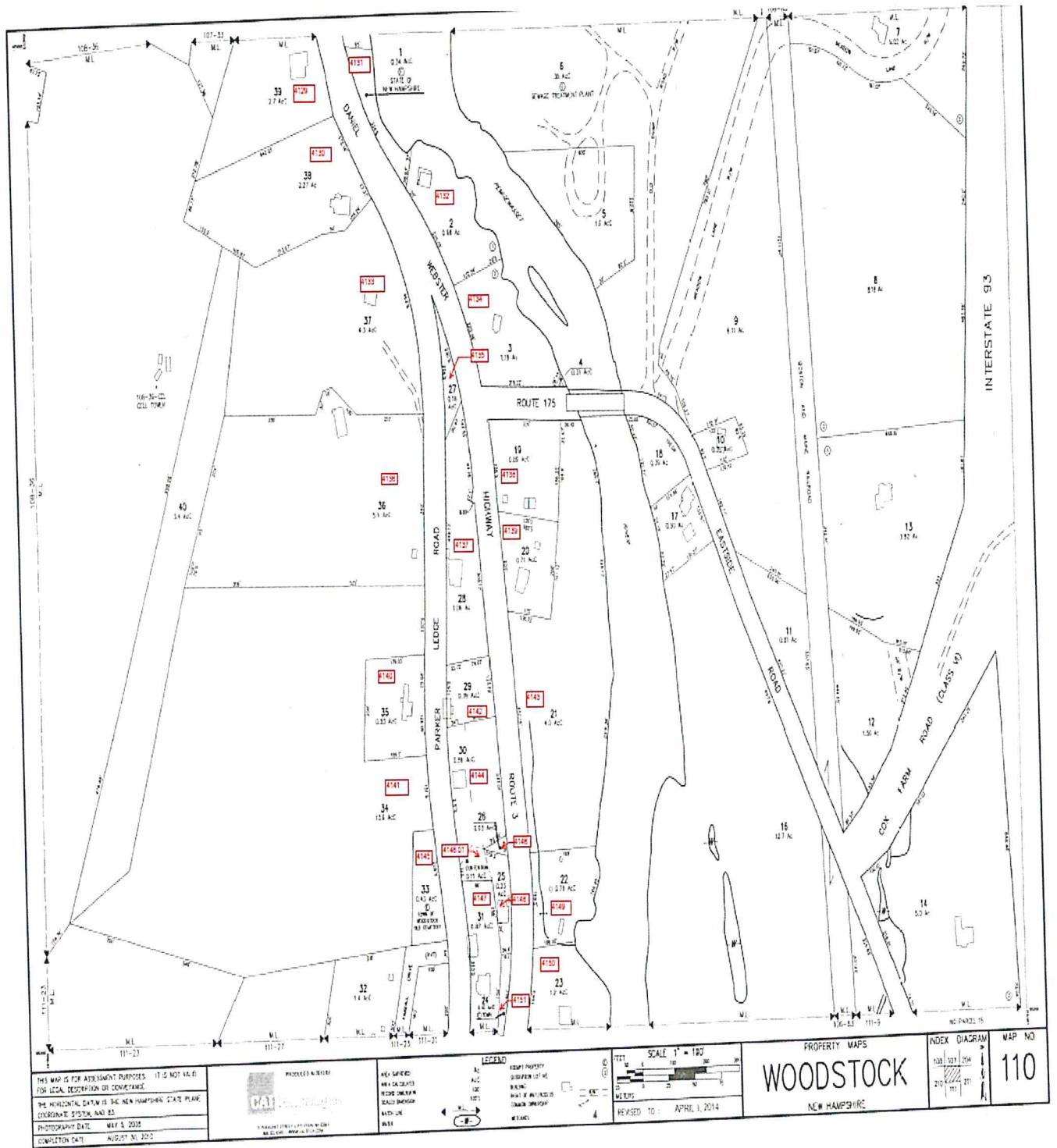


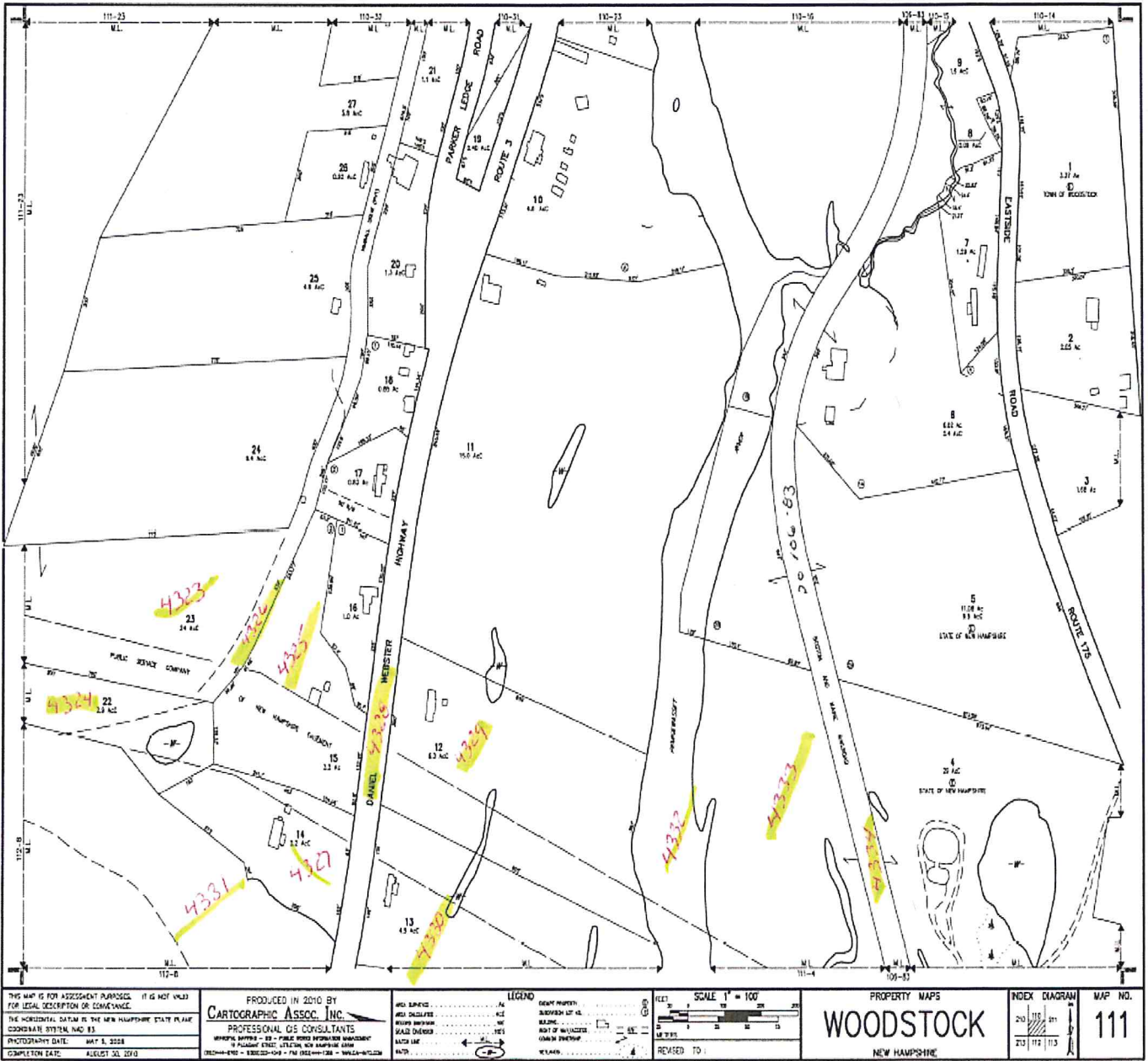


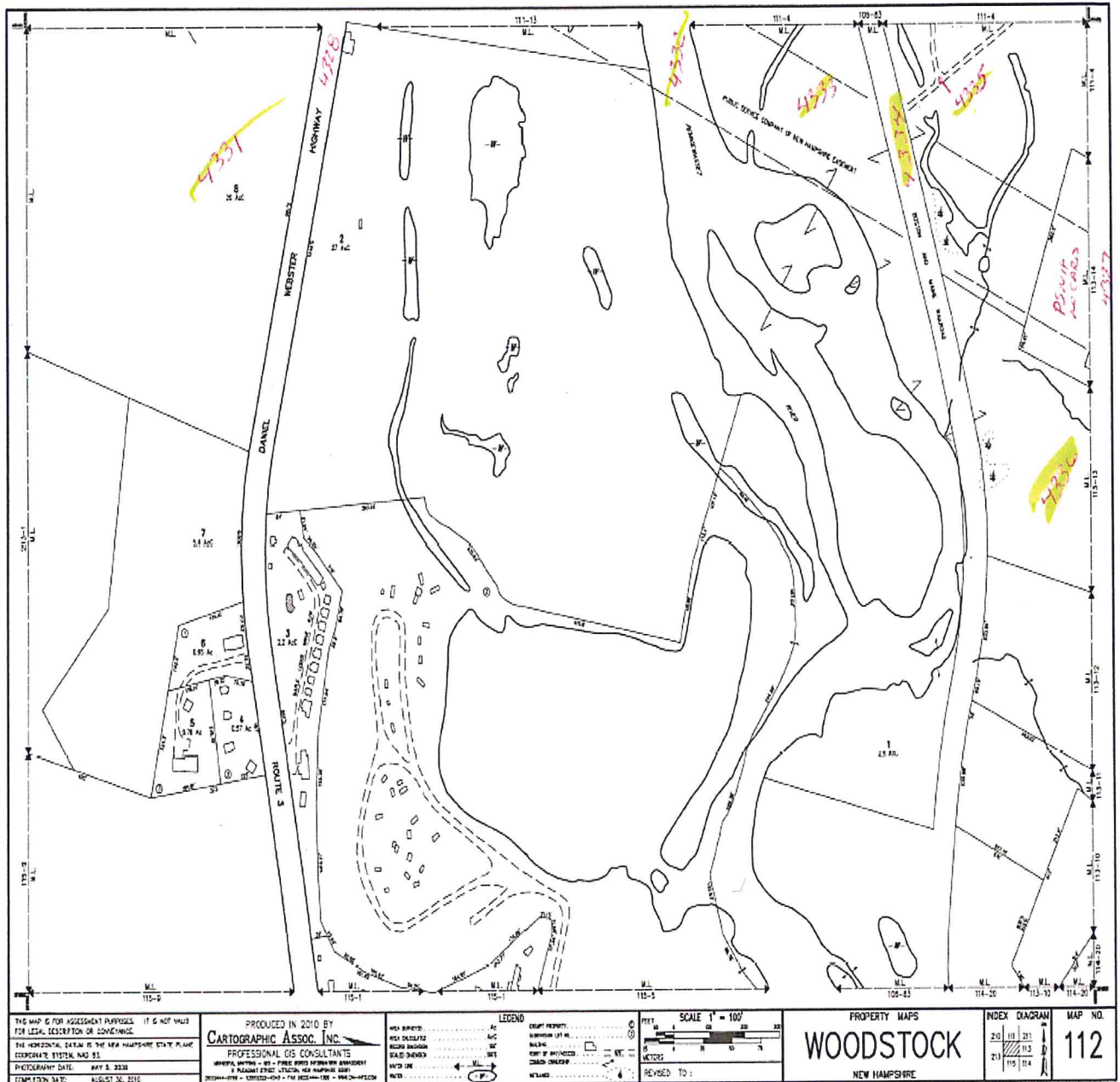
■ Appendix D NH Tax Maps

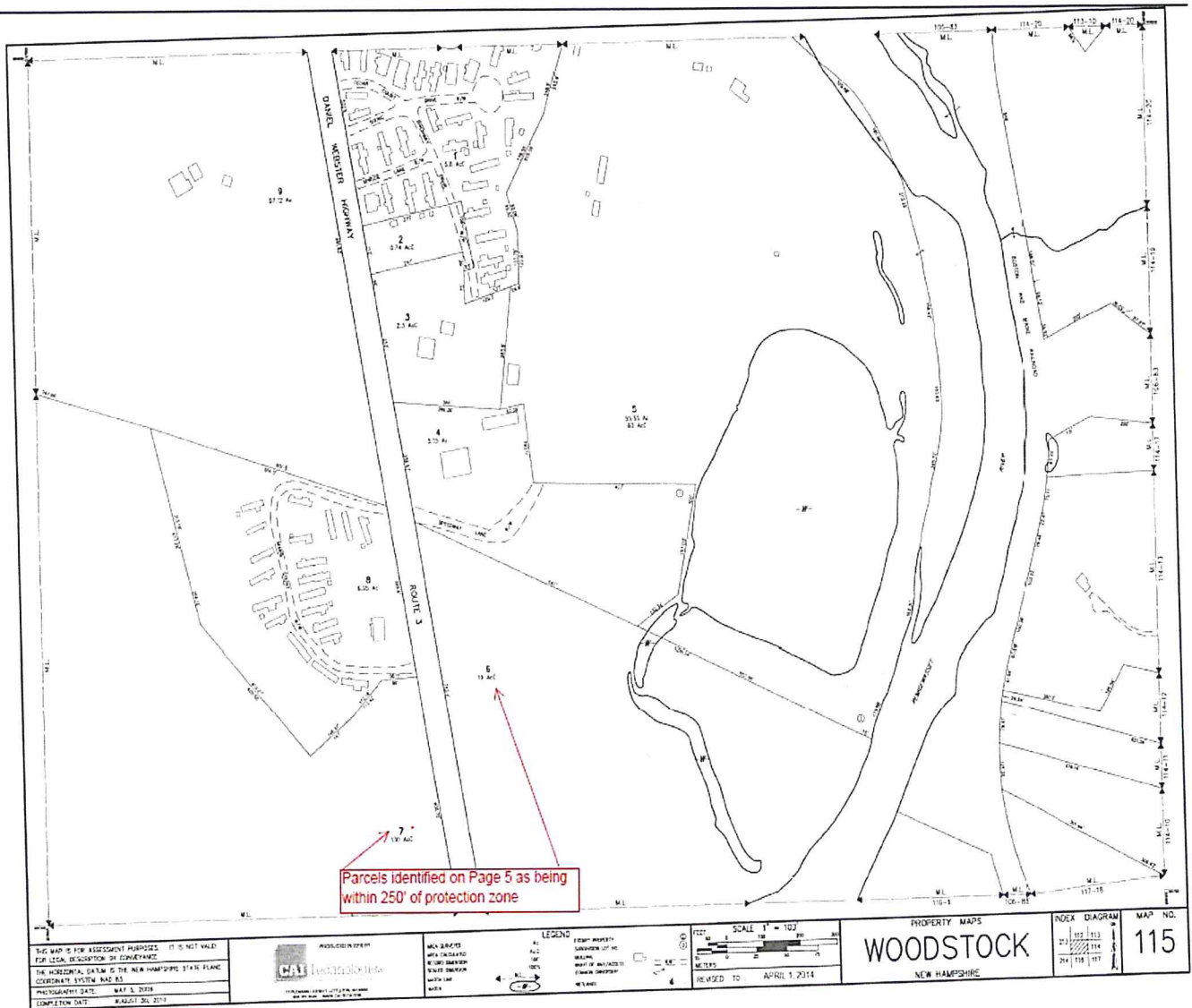


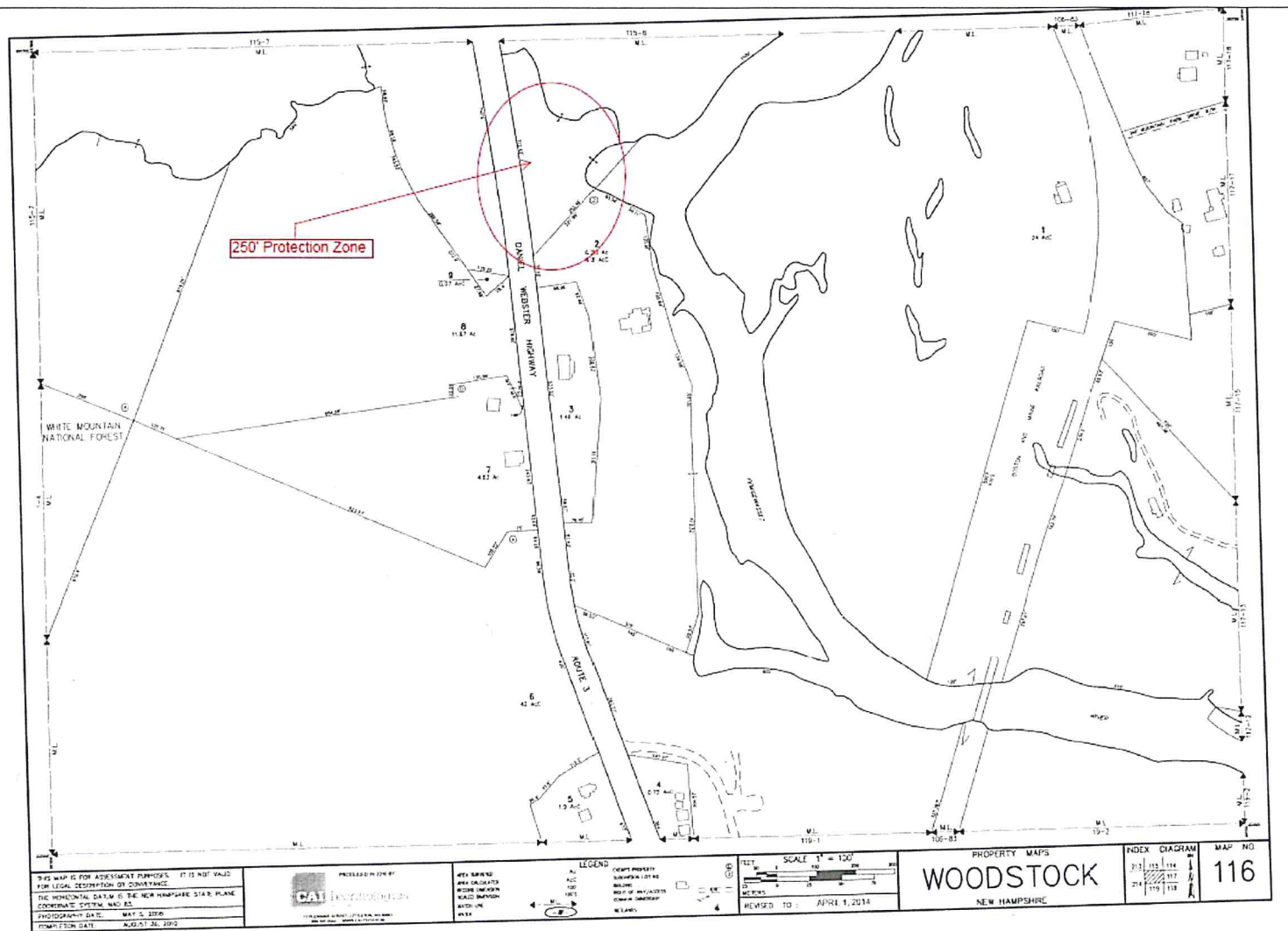


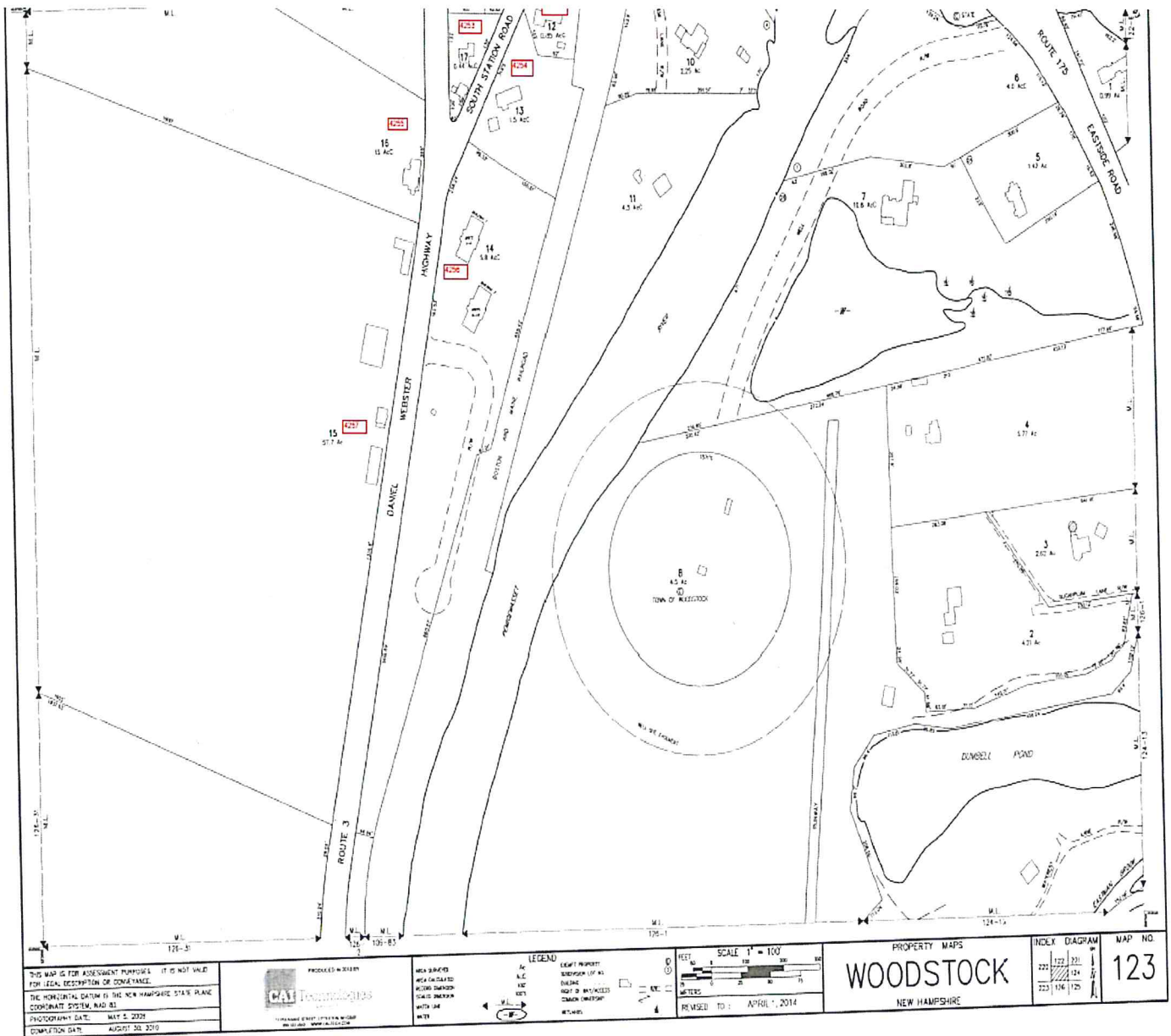


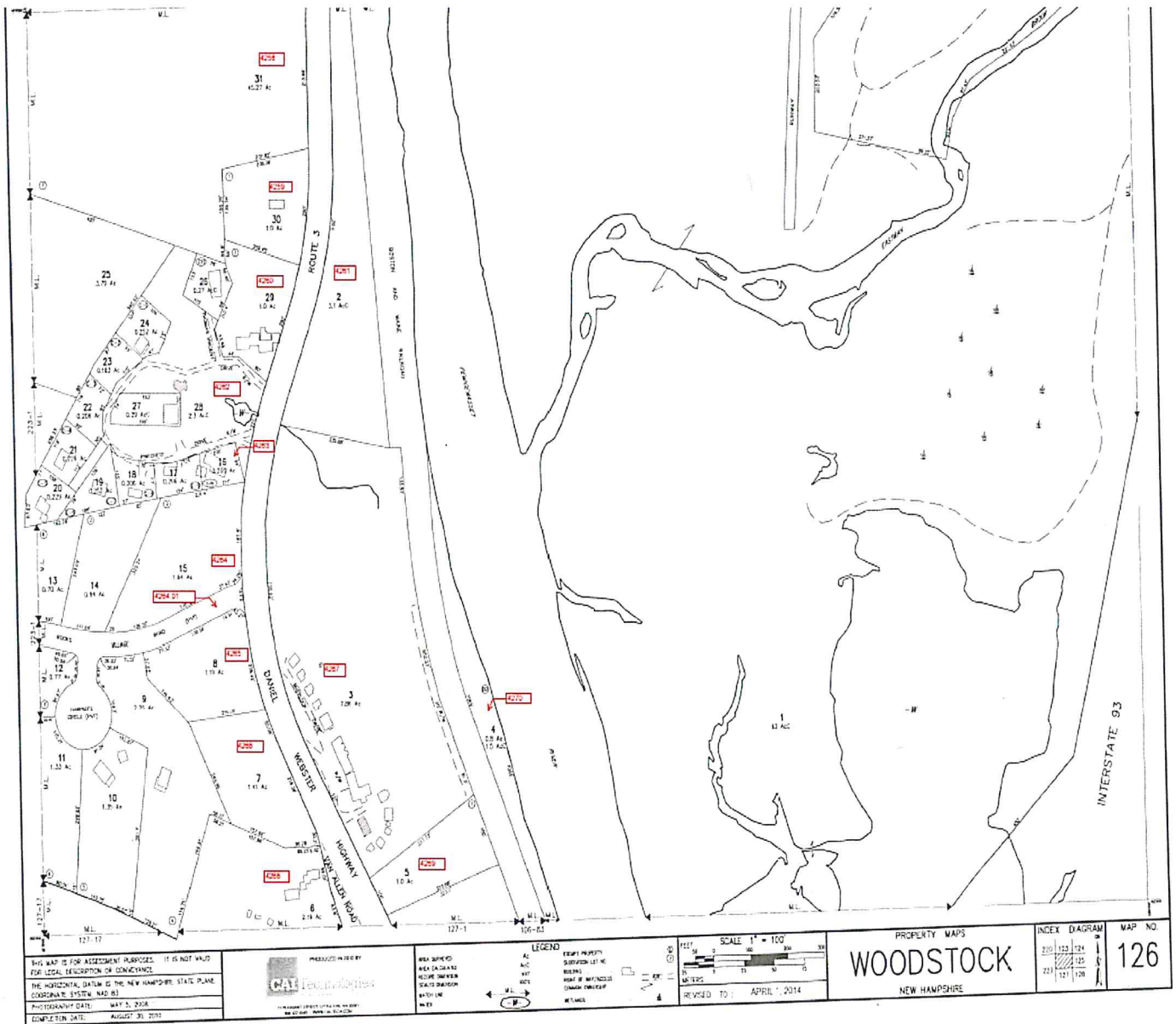


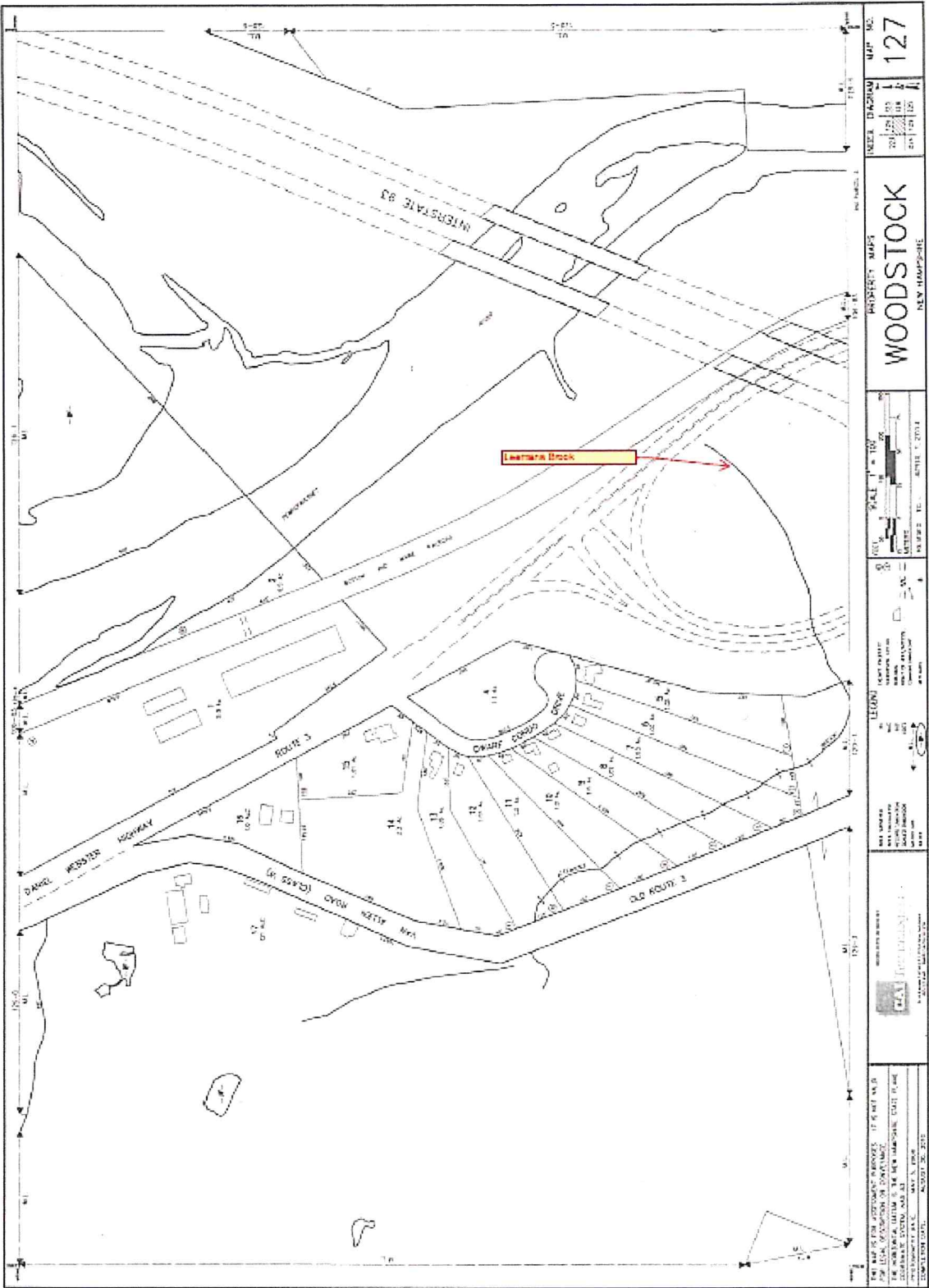












■ Appendix E Representative Photos



Photo 1. The NPT line follows Route 112 and intersects the protected Shoreland Buffer of the Pemigewasset River in Woodstock, NH as part of the Underground Line (UG1). The underground cable will be trenched in this portion of the Protected Shoreland within the Road ROW. Photo 1 shows Route 3 as shown on page 1 of the Project Plan Set (Appendix A) facing south and shows the church on Parcel 107-13-0.



Photo 2. The NPT line follows Route 3 and intersects the protected Shoreland Buffer of the Pemigewasset River in Woodstock, NH as part of the Underground Line (UG1). The underground cable will be directionally-drilled within the Protected Shoreland. Photo 2 shows Route 3 as shown on page 4 of the Project Plan Set (Appendix A) facing south and shows the house on Parcel 112-2-0.



Photo 3. The NPT line follows Route 112 and intersects the protected Shoreland Buffer of the Pemigewasset River in Woodstock, NH as part of the Underground Line (UG1). The underground cable will be directionally-drilled within the Protected Shoreland. Photo shows Route 3 as shown on page 5 of the Project Plan Set (Appendix A) facing south and shows the structure on Parcel 123-15-0.



Photo 4. The NPT line follows Route 112 and intersects the protected Shoreland Buffer of the Pemigewasset River in Woodstock, NH as part of the Underground Line (UG1). Photo 4 shows Route 3 as shown on page 2 of the Project Plan Set (Appendix A) from an aerial view on Google Earth, accessed April 28, 2016.



Photo 5. The NPT line follows Route 112 and intersects the protected Shoreland Buffer of the Pemigewasset River in Woodstock, NH as part of the Underground Line (UG1). Photo 5 shows Route 3 as shown on page 3 of the Project Plan Set (Appendix A) from an aerial view on Google Earth, accessed April 28, 2016.

■ Appendix F NHB Report and Correspondence



NEW HAMPSHIRE NATURAL HERITAGE BUREAU

DRED - DIVISION OF FORESTS & LANDS

PO Box 1 856 -- 1 72 PEMBROKE ROAD, CONCORD, NH 03302-1 856
(603) 271 -221 4

To: William McCloy, Normandeau Associates, Inc.
From: Melissa Coppola, Environmental Information Specialist
Date: March 30, 2015
Subject: Northern Pass Database Request (NHB15-0611)

This memo is to confirm that Normandeau Associates have coordinated with the NH Natural Heritage Bureau (NHB) regarding information on known locations of rare species and exemplary natural communities for the Northern Pass project.

Due to the size and scope of the project, NHB is not providing a typical NHB review memo for permitting. Instead, this memo summarizes information provided by NHB to date, and notes that specific recommendations should be developed after project plans are close to being finalized:

- Normandeau was provided with digital data for the project under a data-sharing agreement dated 1/16/15 (397 digital NHB records). This is the sixth data-sharing agreement Normandeau has requested for this project: others were provided in 2010, 2011, 2012, 2013, and 2014 for project planning and ecological impact studies. NHB has also reviewed work plans associated with plant and community survey methodology on several occasions, including a meeting on 6/18/10.
- At the request of NHB, Normandeau consultants have conducted rare plant and natural community surveys within the proposed project area. If the project area extends to new locations, or new concerns are identified, additional surveys may be requested.
- As the project progresses and impacts areas are further clarified, Normandeau should set up a meeting with NHB staff to discuss avoiding and minimizing impacts to rare plant species and exemplary natural communities.



New Hampshire Natural Heritage Bureau

DRED - Division of Forests & Lands
172 Pembroke Road, Concord, NH 03301
(603) 271-2214

To: Lee Carbonneau, Normandeau Associates, Inc.
From: Amy Lamb, Ecological Information Specialist
Date: October 5, 2015
Subject: Northern Pass Pre-Application Meeting Summary (NHB15-0611)

On March 30, 2015, Melissa Coppola issued a NH Natural Heritage Bureau (NHB) memo (NHB15-0611) to Normandeau Associates, Inc. that listed Threatened and Endangered species populations that will potentially be impacted by the proposed Northern Pass project. Since that date, NHB and Normandeau have met on several occasions to discuss project impacts, avoidance and minimization measures, route changes, and the remaining survey work to be completed.

This memo summarizes the most recent pre-application meeting, which took place on October 1, 2015. This meeting was held in order to review current rare plant and natural community information, refine avoidance and minimization measures, and determine additional steps to be taken in preparation for permit application submittal at the end of October, 2015.

The meeting resulted in the following determinations regarding data and documentation:

- NHB last provided digital data to Normandeau in February of 2015, and will continue to provide any new data (i.e., new plant surveys within the project area) as they become available.
- Normandeau will provide the final reports on Vegetation and Threatened and Endangered species to NHB upon completion.
- Normandeau will provide NHB a table summarizing the anticipated impacts to all rare plants and exemplary natural communities within the selected corridor. This table will distinguish between the different types of impacts and their resulting (long-term) effects on rare plants and exemplary natural communities.

- Any reports that are filed as publicly available information will not contain specific locations of rare plants; this information will be restricted to an appendix and treated as confidential, and will be removed from publicly available reports.
- The rare plant avoidance and minimization measures that the applicant has proposed were developed in consultation with NHB. NHB will provide additional species-specific avoidance and minimization guidance during the permit review period. This will consist of a table with prioritized actions for each species.
- As any new areas for access, staging, etc. become known, Normandeau (or any subsequent contractor) will conduct rare plant surveys in the areas and provide the results to NHB.
- Normandeau identified Lee Carbonneau as the point person for future Natural Heritage communications, and the NHB point person will be Amy Lamb.

The meeting also resulted in the determination of several measures to avoid and minimize impacts to Natural Heritage resources during construction:

- Meetings will be held among contractors, environmental monitors, and inspectors, prior to contractors working in or near areas where listed plants are located, that will include making contractors aware of sensitive areas and the appropriate best management practices for each area.
- Plans that are provided to contractors will contain a color-coded bar indicating the extent of a sensitive area; no further information will be revealed on such plans.
- Normandeau (or any subsequent contractor) will have "Sensitive Area" signs installed around rare plant populations and exemplary natural communities to alert work crews to their presence.
- It was agreed that it is critical that environmental monitors have the power and authority to stop work immediately if they become aware that any action will violate agreed-upon BMPs.
- NHB will make a recommendation to NHDES regarding qualifications of Environmental Monitors, to be included as a permit condition.

NHB and Normandeau will continue to communicate as the project progresses, in particular as any route changes or new impacts to rare plants become known.

Northern Pass has coordinated with the NH Natural Heritage Bureau (NH NHB) since 2010 to obtain information on known locations of rare species and exemplary natural communities within a half mile of the Northern Pass Project. Normandeau Associates was provided with a digital data set for known locations. Based on the information provided by NHNHB and additional desktop research, Normandeau Associates prepared and implemented a work plan for field surveys for rare plant and natural community surveys. This work plan was approved by the NH NHB.

Within a half mile of the protected Shoreland of the Pemigewasset River in Woodstock, NH there are two element occurrences identified by NHB. NHB identified two elemental occurrences within the vicinity of Moosilauke Brook in Woodstock, NH. NHB identified the S3 state ranked high-gradient rocky riverbank natural community and the S1S3 *Cicindela ancocisconensis* (a Tiger Beetle).

- NHB identified two element occurrences within the vicinity of the Pemigewasset River at the first buffer in Woodstock, NH. NHB identified the S3 state ranked high-gradient rocky riverbank natural community and the S1S3 *Cicindela ancocisconensis* (a Tiger Beetle) (Attachment A).
- NHB identified the same two element occurrences within the vicinity of the Pemigewasset River at the second shoreland buffer in Woodstock, NH. NHB identified the S3 state ranked high-gradient rocky riverbank natural community and the S1S3 *Cicindela ancocisconensis* (a Tiger Beetle) (Attachment A).
- NHB identified the same one element occurrence within a half mile of the third shoreland site in Woodstock, NH. NHB identified the S1S3 *Cicindela ancocisconensis* (a Tiger Beetle) (Attachment A).
- NHB identified two element occurrences within a half mile of the fourth shoreland site in Woodstock, NH. NHB identified the S3 *Opheodrys vernalis* (smooth green snake) and the S1 Bat Hibernaculum (Attachment A).
- NHB identified two element occurrences within a half mile of the fifth shoreland site in Woodstock, NH. NHB identified the S3 *Opheodrys vernalis* (smooth green snake) and the S1 Bat Hibernaculum (Attachment A).
- No NHB element occurrences are present within a half mile of the sixth shoreland buffer impact (Attachment A).
- No NHB element occurrences are present within a half mile of the seventh shoreland buffer impact (Attachment A).

■ Appendix G

Certified Mail Notifications and Receipts

N/A for abutters (Waiver for public utility lines exempt per RSA-483-B:5-b, IV (A))

Shipment-----

USPS First Class Package Service

Ship To:

Town of Woodstock
165 Lost River Road
N WOODSTOCK, NH 03262

Package ID: 180426 9.77
Tracking #: 9407110200883058156709
Actual Wt: 0 lbs 10.3 ozs
Rating Wt: 0.68 lbs
Certified [\$4.25]

USPS Priority Mail

Ship To:

Max Stamp, Chair
Pemigewasset River Local Ad. Comm.
2110 SUMMER ST
BRISTOL, NH 03222-3249

Package ID: 180428 13.21
Tracking #: 9402610200793993599649
Actual Wt: 1 lbs 12.7 ozs
Rating Wt: 2 lbs
Pkg Dims: 13.00 x 12.00 x 2.00
Certified [\$4.25]



Via Certified Mail

April 28, 2016

Town of Woodstock
165 Lost River Rd.
Woodstock, NH 03262

Re: Shoreland Permit Application – The Northern Pass Project

Dear Sir or Madam:

Enclosed please find a copy of the Shoreland Permit Application package that will be filed with the NH Department of Environmental Services (DES) and New Hampshire Site Evaluation Committee for the Northern Pass Project. This is an update to a previously submitted application that includes one or more additional work locations within the protected shoreland of a public water or Designated River in your regulatory area. Under state law, it is a requirement to provide the municipalities and Local River Advisory Committees having jurisdiction over these waterbodies with a copy of the shoreland application by Certified mail, for review and comment.

Sincerely,

Lee Carbonneau
Normandeau Associates, Inc.
As agent for Northern Pass Transmission, LLC.



Via Certified Mail

April 28, 2016

Pemigewasset River Local Advisory Committee
Max Stamp, Chair
2110 Summer St.
Bristol, NH 03222

Re: Shoreland Permit Application – The Northern Pass Project

Dear Mr. Stamp:

Enclosed please find a copy of the Shoreland Permit Application package that will be filed with the NH Department of Environmental Services (DES) and New Hampshire Site Evaluation Committee for the Northern Pass Project. This is an update to a previously submitted application that includes one or more additional work locations within a protected shoreland of a public water or Designated River in your regulatory area. Under state law, it is a requirement to provide the municipalities and Local River Advisory Committees having jurisdiction over these waterbodies with a copy of the shoreland application by Certified mail, for review and comment. Sincerely,

Lee Carbonneau
Normandeau Associates, Inc.
As agent for Northern Pass Transmission, LLC.